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OFF THE HOOF

Kentucky Beef Newsletter – April 2008

Published Monthly by Dr. Les Anderson, Beef Extension Specialist, Department of Animal & Food Science, University of Kentucky

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This month's newsletter includes:

Timely Tips

Dr. Roy Burris, University of Kentucky Beef Specialist

Spring Calving Cow Herd

- Continue to watch cows and calves closely. Identify calves while they are young and easy to handle. Commercial male calves should be castrated and implanted. Registered calves should be weighed at birth.
- Continue to feed cows that have calved on an adequate nutritional plan to rebreed. Don't let them lose body condition.
- *Prevent grass tetany!* Continue providing magnesium in the mineral mix until daytime temperatures are consistently above 60^{o}F. Mineral supplement should be available at all times and contain a minimum of about 14 percent magnesium. Make sure that your mineral mix also contains adequate selenium, copper and zinc or you can ask your feed dealer for the UK Beef IRM High Magnesium Mineral.
- Don't "rush to grass" although it will be really tempting this year. Be sure that grass has accumulated enough growth to support the cow's nutritional needs before depending solely upon it. Cows may walk the pastures looking for green grass instead of eating dry feed. This lush, watery grass is not adequate to support them. Keep them consuming dry feed until sufficient grass is available to sustain body condition. We've spent too much money keeping them in good condition to lose it now!
- Purchase replacement bulls at least 30 days prior to the start of the breeding season. Have herd bulls evaluated for breeding soundness (10-20% of bulls are questionable or unsatisfactory breeders). Get all bulls in proper condition for breeding.
- Make final selection of heifer replacements. Be sure that yearling heifers have attained their "target" weight (2/3 of mature weight) before breeding. Obtain measurements for pelvic area in heifers and cull those which have small pelvic areas. Consider vaccinating with a modified-live BVD vaccine.

- If you are going to use artificial insemination and/or estrus synchronization, make plans now and order needed supplies and semen.
- Prebreeding or "turn-out" working is usually scheduled for late April or May - between the end of calving season and before the start of the breeding season (while cows are open). Consult your veterinarian about vaccines and health products your herd needs. Make arrangements now for products needed and have handling facilities in good working order. Dehorn commercial calves before going to pasture.
- Start breeding heifers 1 heat cycle before cows so that they have extra time to recover from calving next year.

Fall Calving Cow Herd

- You may let calves creep-graze wheat or rye, if it is available. Calves will benefit from extra feed until spring grass appears.
- Pregnancy check cows now and cull open ones at weaning or move to the spring-calving herd.
- Reimplant feeders.
- Consult with your veterinarian about a preweaning working of the herd.
- Plan marketing strategy for feeder calves.

Stocker

- "Condition" purchased calves prior to grazing. They should be processed and fed a conditioning diet prior to being placed on pasture. You can also use this time to introduce them to electric fences which are used in rotational grazing.
- Don't go to pastures too soon, give plants some growing time. Then stock at two to three times the July rate and rotate rapidly.
- Provide a good mineral supplement which contains a rumen modifier (Rumensin, Bovatec, etc.) along with adequate levels of copper and selenium. The UK Beef IRM Stocker mineral with Monensin will work well in this case.

General

- Prepare for the grazing season. Check fences and make necessary repairs.
- Get everything ready to make high quality hay in May! Have equipment serviced and spare parts on hand. Order baler twine now. Be prepared to harvest an adequate supply of hay when you have the opportunity. Re-supply the extra hay that you fed out of storage.
- Plan now for fly control ... decide what fly control program that you will use but don't put insecticide eartags on cattle until fly population appears.
- Make plans to improve hay feeding areas to avoid muddy conditions like we have faced this winter. Consider geotextile fabric with gravel.

"We Have Met the Enemy…"

Dr. Roy Burris, Beef Extension Specialist, University of Kentucky

The recent beef recall, which was the largest in U.S. history, has made the entire beef/dairy industry take an introspective look at itself. As the Scottish bard, Robert Burns said, "O wad some power the giftie gie us, to see oursels as ithers see us!" We have to be concerned with public perception because it affects

demand and demand is a major determinant of price. We simply can't keep handing ammunition to the very people who want to put us out of business. Maybe the cartoon character, Pogo, said it best "We have met the enemy and he is us."

What might happen if we allow people outside of agriculture to make decisions for us? You can ponder the effects of the U.S. ban on horse slaughter. Has it made life better for horses that are now becoming old, debilitated and starving? Is it more ethical to ban slaughter or to permit humane harvest of animals and their use for food? Would it be more ethical to allow this meat to be consumed in third world countries if we don't want it? What will be banned next?

The videos from the Hallmark/Westland Meat Company in Chino, California gave the industry the proverbial "black-eye". This wasn't really about food safety. It was a public reaction to animal handling practices which are not defensible and are not characteristic of our industry.

So what went wrong with the slaughter/harvest of those cull cows in California which were non-ambulatory (downers)? First of all, we shouldn't overlook the use of untrained, perhaps uncaring, personnel. The "stars" of that video were not what we would have chosen to represent the industry. Yet represent us they did. The workers were not an asset to Hallmark/Westland Meat Co. either. Hallmark/Westland had 250 employees and sales which totaled $100 million per year. As a result of the recall, it is not expected to reopen and will probably go out of business.

The Humane Slaughter Act of 1958 was enacted to prevent situations like this by using the USDA-Food Safety and Inspection Service (FSIS). After the BSE occurrence in December 2003 (another "downer" cow), there was an edict which banned all downer cattle. This was eventually relaxed to allow cattle that were recently injured, perhaps in transit, to be labeled as suspect and re-inspected after harvest. Although well intended, considering the salvage value of cull cows, this left a loop-hole that you could drive a truck through. The result could be not paying enough attention to downers and relying on the post-harvest inspection to catch any food safety problem. This might be enough to safeguard the food supply but, if abused, leaves the industry vulnerable to public perception. The dragging of conscious animals is not defensible and should not be tolerated.

Now, what can we do about the problem? First, everyone must realize that cull dairy cows are beef, too. Temple Grandin (Animal Welfare Information Center Bulletin Vol. 9, no. 1-2) stated that "about 5 percent of the dairies are responsible for 95%" of the occurrences of crippled downer cattle. No one denies the importance of salvage value of cattle but cull dairy and beef cows must be presented for harvest in acceptable physical condition. Market them sooner. For most of us, a short feeding/conditioning period prior to marketing is a viable economic practice which can improve the value of cull cows, especially at weaning time. Safe handling practices are also necessary during shipment.

What do I think will happen in the future? Probably more integration among all phases of the beef/meat industry. The cow-calf, backgrounding, finishing, packing, etc. segments are pretty independent of each other. In my opinion, we will see more alliances which will guarantee that best management practices have been used in animal production. In other words; wholesome, healthy, traceable beef which is produced in environmentally friendly systems and handled humanely in every phase of production. We may have a two-tiered system. On one level we might have premium beef, on the other – commodity meat. We must have a marketing system that protects us … from us.

Begin Planning The Breeding Season

Dr. Les Anderson, Beef Extension Specialist, University of Kentucky

Now is the ideal time to prepare for the breeding season. Mark on your IRM calendar the dates you will turn in and remove your bulls from the herd. Producers should consider synchronizing estrus. If natural service is to be used, producers can synchronize estrus either by feeding MGA for 7 days prior to the breeding season or by inserting a CIDR device for 7 days before the bulls are turned out. Below is a little article on estrus synchronization with natural service.

Estrus synchronization can greatly improve reproductive efficiency and profitability in cow-calf operations. Estrus synchronization increases profitability by improving pregnancy rate, increasing weaning weights, enhancing calf uniformity, and improving cow productivity. Cow productivity is increased because more early-born heifers are available for use as replacements. Research has demonstrated that early-born heifers become more productive cows because they are more likely to conceive early in their first and subsequent breeding seasons and therefore wean older, heavier calves. Estrus synchronization has been used mainly to enhance the use of artificial insemination. Data from the University of Kentucky illustrates that estrus can be synchronized before a natural service season. In this trial, mature cows and 2-year-old cows approximately 65 days after calving were assigned to one of three treatments. The cows in the first group were not treated (CONT) and were exposed to natural service for 60 days. The cows in the second group (MGA) were fed the orally active progestin melengestrol acetate (MGA, .5 mg/hd/d) for 7 days and were exposed to natural service for 60 days beginning the day after MGA feeding ended. Cows in the third group (CIDR) had a EAZI-BREED CIDR device inserted for 7 days before being exposed to a 60-day natural service season. All bulls used in this experiment were mature and were subjected to breeding soundness exams approximately 30 days before the breeding season. Bull-to-cow ratios (BCR) ranged from 1:23 up to 1:42. Date of conception was determined using rectal palpation approximately 30 days after the end of the breeding season. The results of this experiment are illustrated in Table 1. More cows conceived and conceived earlier in the treated than in control groups. Treatments did not differ because of BCR.

Table 1. Effects of estrus synchronization prior to natural service on reproductive response in postpartum beef cows.

Treatment	Number of Cows	Pregnancy Rate (%)	Pregnant in the First 30 Days (%)
CONT	1,040	83	46
MGA	614	93	78
CIDR	421	91	80

Synchronization prior to exposure to natural service markedly enhanced the rebreeding performance in this experiment. The use of estrus synchronization prior to natural service certainly improved pregnancy rates, should improve weaning weights (because the calves will be older), and should improve uniformity of the calf crop. Rough estimates indicate that based on the predicted reproductive response, cows in the treated groups returned approximately $121 more profit than cows in the control group. Therefore, inclusion of estrus synchronization should be recommended

If AI is to be used, contact your technician to set up the dates and order semen and other supplies. Contact your local veterinarian to set up a date for a breeding soundness exam for your herd sires. Remember, every bull needs to be subjected to a breeding soundness exam about 30 days before the breeding season. One infertile cow means one fewer calf at weaning while one infertile bull means zero calves at weaning.

Improving Cowherd Reproduction via Genetics, Part 1 of 2

Wade Shafer, American Simmental Assocation Director of Performance Programs

A beef cow's job is not an easy one. She is expected to conceive at slightly over one year of age to calve by the time she is two and rebreed shortly after that while weaning a healthy, viable calf. Furthermore, we demand that she consistently repeats this cycle for the rest of her life - one stumble and, in the words of California's terminating governor, hasta la vista, baby!

To be sure, producers are best served when the cow successfully performs her task for many years, as the longer her productive life the more profitable she is to the enterprise. Is there anything that can be done to help her out? Certainly, there are environmental factors we can manage that will give her a leg up. For example, by providing adequate nutrition, a proper vaccination regimen and mating her to easy-calving sires (particularly when she is young) we increase the odds of her success. While a cow's environment has a substantial impact on her reproductive performance, her genetic makeup can too. This paper explores the genetics of female reproduction and offers suggestions on how to improve the reproductive performance of your cowherd via genetics.

Crossbreeding: The obvious place to start a discussion about the genetics of female reproduction is with the factor that far and away has the greatest affect on it - crossbreeding. It has long been recognized that crossbreeding enhances virtually all aspects of reproductive performance. Studies too numerous to list here have established the reproductive superiority of crossbred over straightbred cows.

In one of an abundance of studies with similar findings, scientists at the Meat Animal Research Center (MARC) concluded that two-breed rotational cross cows produced 20% more calves over their lifetime than straightbreds due to the favorable impact of heterosis on dam fertility/longevity and calf survivability brought about by the improved calving and mothering ability of the dam (Cundiff et al., 1992). Furthermore, they estimated that when mated to a bull of another breed the two-breed cross cows would wean 36% more weight over their lifespan than straightbred cows raising straightbred calves. The dramatic increase is attributable to the positive influence of heterosis on reproduction and production in the dam and well as increased growth and survivability in their calves.

Given the overwhelming evidence of the crossbred cow's reproductive supremacy and the fact that reproduction is a major piece of the profitability puzzle (by most accounts exceeding all other functions by a wide margin in relative importance), it is difficult to conceive of a situation where a commercial enterprise would not benefit financially from a crossbred cowherd.

Am I implying that selecting animals within a breed for reproductive performance is not a worthwhile endeavor? No! Reproductive progress can be made via selection (which I will address later); however, it would take years of intense selection within a breed to yield the kind of improvement that can be achieved in one fell swoop by simply crossbreeding.

Therefore, crossbreeding makes a logical cornerstone in any effort to enhance cowherd reproductive performance. With crossbreeding as the foundation, the selection of superior animals of multiple breeds as inputs to the crossbreeding system can be considered a supplemental means of further boosting reproductive function; however, identifying reproductively superior animals has its challenges, as I will explain.

Indirect Selection: Because the assessment of a cow's reproductive performance is generally determined later in her life, it seems logical to look for early indicators to hasten the process. For example, it is a commonly-held belief that females with a propensity toward fatness will excel reproductively.

Though research has shown that increased fatness, to a point, is strongly and favorably associated with reproductive performance on a phenotypic scale, the few attempts to assess the relationship on a genetic level show an unfavorable, though weak, relationship. Using data from the Red Angus Association of America (RAAA), researchers at Colorado State University (CSU; Beckman et al., 2006) derived genetic correlations ranging from -.12 to -.22 between body condition at various ages and stayability (by industry convention, the probability of a cow remaining in the herd through 6 years of age). At the American Simmental Association (ASA), we have found a correlation of -.19 between an animal's genetic propensity for backfat in the feedlot and their inherent stayability. We (ASA) have also calculated a -.11 genetic correlation between backfat and heifer pregnancy (the likelihood of a heifer being pregnant at the end of the breeding season) using RAAA data.

Admittedly, these unfavorable correlations between fatness and reproduction may seem illogical. We have all seen a higher proportion of thin cows open at pregnancy test time. Keep in mind, however, that the aforementioned correlations are genetic. The relationships we actually observe, i.e., phenotypic correlations, are influenced by a combination of underlying environmental and genetic relationships. There is little question that females within a herd lucky enough to experience an environment for increased body condition (e.g., extra energy intake) are likely to have better reproductive performance than their herd mates. Furthermore, this strong and positive environmental relationship between fat and reproduction apparently overwhelms what appears to be a slightly negative genetic relationship - yielding the strong, favorable phenotypic relationship we typically observe.

Frankly, there is not enough evidence about the genetic relationship between fatness and reproductive function to make recommendations based on it at this time; however, though it may fly in the face of conventional wisdom, it appears that selecting "easy-fleshing" genotypes will not gain us ground reproductively.

Scrotal circumference has been considered as a predictor of female reproductive performance. Though the preponderance of evidence indicates a strong to moderately favorable relationship between scrotal circumference and age at puberty in related females, research is less clear on the relationship between scrotal circumference and subsequent measures of reproduction. In a study based on a large population involving several breeds at the MARC, Martinez-Velazquez et al. (2003) found a slightly unfavorable (.15) relationship between scrotal circumference and age at first calving and no relationship between scrotal circumference and 1st pregnancy, 1st calving and 1st weaning rates. Their conclusion was that selection on scrotal circumference would not be effective in improving female reproduction. These findings are in agreement with some studies and contradicted by others. For those interested, Martinez Velazquez et al. (2003) provides and excellent literature review on the subject. Given the conflicting evidence, it may not be advisable to base selection decisions on scrotal circumference with the intent of enhancing maternal reproduction.

As for other traits that may be related to reproductive function, Rogers et al. (2004) found that increased levels of milk EPD increased the risk of females being culled. This finding is consistent with ASA data showing an unfavorable (-.15) genetic correlation between milk and stayability. Other ASA genetic correlations of note: -.26, .40, and -.19 between stayability and mature weight, maternal calving ease and marbling, respectively. Based on these findings, we would expect females that are inherently lower milking, smaller mature sized, easier calving and less marbled to stay in the herd longer; however, none of these relationships are strong enough to make a sizable impact on stayability by selecting for them. Furthermore, other than mature weight because of its strong relationship to early growth, determining the genetic level of a young heifer for these traits by simply observing them (which is what most commercial producers are limited to) is not possible. Therefore, a different tack will be required if we wish to improve reproductive performance via selection. Namely, select for it directly - which, as I will point out, is not a trivial task.

Next week, Part 2 of this article begins with a focus on Direct Selection**.**

Article courtesy of the Ohio Beef Cattle Newsletter

Analyzing the Cost of a Bull

Scott P. Greiner, Extension Beef Specialist, VA Tech and Matthew Miller, Extension Farm Business Management Agent, VA Tech

With the steady increase in input costs for cow-calf operations, beef producers will look to save money and cut costs in multiple fashions. One area often targeted for cost-cutting measures is money spent on bulls. Often producers focus on the initial cost of a sire, and realize "sticker shock" when purchase prices move upward. Considering that the herd sire has significant impact on numerous of traits with economic importance (coat color, calf vigor, weaning weight, carcass grade), an individual sire has a pronounced impact on profitability. Bull purchase price needs to be put in perspective by evaluating price relative to years of useful service the cost per cow exposed. Table 1 compares the cost per cow or a bull with a $2500 purchase price and one with a $1500 purchase price. Assumptions are as follows: 4 years of service, salvage weight of 2000 lbs, salvage price of $50 cwt. Cost per cow exposed is shown for each purchase price given the number of cows exposed. This table considers all annual costs for the bull, and includes purchase price, annual carrying cost, and health/veterinary expenses. It is important to note that initial purchase price typically only represents 20-40% of annual bull costs, and this percentage decreases the longer the bull is in use. The majority of bull costs are incurred in feed costs. No consideration is given to genetic merit differences between the bulls. While it is unrealistic to assume a bull will breed 60 to 80 cows in a given breeding season, many producers utilize two calving seasons and therefore the higher number of cows exposed apply to breeders calving in both the fall and spring and utilizing the same bull for two separate calving seasons.

Table 1. Impact of Bull Purchase Price on Cow Breeding Cost

	Number of Cows					
$2500 Bull	**15**	**25**	**30**	**40**	**60**	**80**
Per Cow Exposed Expense	**$57.65**	**$34.59**	**$28.83**	**$21.62**	**$14.41**	**$10.81**
	Number of Cows					
$1500 Bull	**15**	**25**	**30**	**40**	**60**	**80**
Per Cow Exposed Expense	**$39.82**	**$23.89**	**$19.91**	**$14.93**	**$9.95**	**$7.47**

Assuming an average herd size of approximately 30 cows we see that there is a $9 per cow exposed cost difference between the bulls. Does this mean that the cheaper bull saves you approximately $270 a year ($9 x 30 cows per year)? If the bulls are identical in genetic merit this may be the case, however the difference in purchase price is likely attributable to superior genetics offered by the higher-priced bull. As an example, if we assume a weaning weight advantage of 15 lbs on 25 calves for the $2500 bull, and an average value of $0.80 for each additional pound of weight, this equates to a $12 per head advantage. This $12 per head advantage more than offsets the difference in breeding costs, and quickly puts into perspective the minor difference in the real cost between the bulls. In fact, the less expensive bull actually costs more money, all things considered in this scenario.

Quality of the herd sire almost always is undervalued. The differences described in the table above are very small considering the many opportunities to derive return on investment for the superior bull. If the $2500 bull is superior in calving ease, which results in one more live calf to market, the difference in purchase price has paid for itself.

Although more difficult to measure, daughters of a superior sire have favorable impacts on future calf crops. Thus the compounded effects a sire has on his calf crops and those of his daughters warrant consideration.

In most situations, sound investments in superior bulls 'don't cost, it pays." As we embark on what many consider a new era in the cattle business, which will partly be defined by producers' ability to control costs, a close examination of opportunities to do so is warranted. Costs associated with genetics is likely not an area to cut corners. In fact, it is likely that the market differentiation between the "good ones" and "average ones" will continue to grow, and the ability to produce the "good ones" is directly related to genetics and management.

Article courtesy of the Ohio Beef Cattle Newsletter

Roberts Agricultural Commodity Market Report

Mike Roberts, Commodity Marketing Agent, Virginia Tech University

LIVE CATTLE futures on the Chicago Mercantile Exchange (CME) were mostly gainers on Monday. The APR'08LC contract closed at $87.425/cwt, off $0.225/cwt and $1.800/cwt lower than two weeks ago. JUNE'08LC futures were down $0.125/cwt at $87.750/cwt and $2.230/cwt lower than Monday before last.

The rest of the back months were gainers but all contracts lost some ground on pressure from increasing corn prices and short covering near the close. USDA reported a large hog supply which competes with beef for meat protein. Lower cash sales also prompted some selling. The USDA 5-area price was $1.00-1.80/cwt lower than this time last week and $7.50-$8.00/cwt lower than this time last year. It has been reported that feedlot losses were estimated as much as $150.00/head last week. USDA placed last week's sales figures for the Texas/Oklahoma area at 41,611 head and in Kansas, almost 32,000 head were sold. USDA on Monday put choice beef cutout at $138.22/cwt, up $0.83/cwt. Select prices aren't usually reported in this report but are still running close to choice at $137.88/cwt meaning folks are still buying cheaper cuts of meat in this shaky economy. Demand for fat cattle is expected to remain at a lower level because of sustained negative packer margins. According to HedgersEdge.com, the average beef plant margin for Monday was estimated at a negative $28.80/head but this is $1.05/head better than this time last week. Packers were estimated paying $89.28/cwt vs. an estimated breakeven buy of $86.99/cwt. In addition, higher fuel prices are affecting transportation costs and buyers are just not as willing to pay up for the cattle. Problems with exports from South America could provide openings for U.S. beef in Asian markets. Cash sellers should sell cattle on any rally. Hopefully corn inputs were priced on last week's slide. If not, it will probably be another two weeks before any significant opportunity to price corn may come along.

FEEDER CATTLE at the CME were down across the board on Monday. The APR'08FC contract finished at $99.300/cwt, down $1.125/cwt. MAY'08FC futures were down $1.050/cwt at $101.225/cwt. Losses could have been steeper but were limited on end-of-session-profit-paring in the CBOT corn pit. I'm writing this report from Oklahoma City and passed the Oklahoma City cattle market on the way in to town from the airport. It was reported that cash feeders in Oklahoma City were $2.00-$2.50/cwt lower after starting out a shaky $5.00/cwt lower then recovering later in the day. There didn't seem to be a lot of feeder cattle trading today. Feeder buyers are finding it difficult to keep things together right now. It seems that everything is coming together to pressure them. Gregg Doud, Chief Economist for the National Cattlemen's Beef Association said it well. It is the perfect storm for the cattle business because of higher input costs, lack of market access to Japan and Korea, increased pork supplies and the troubled U.S. economy. This is unprecedented." I agree. One analyst has estimated that feeders are losing up to $200.00/head. The latest CME Feeder Cattle Index for March 27 was placed at $99.68, down $0.02/cwt but $0.66/cwt better than this time last week. Feeders don't look like they will recover this week on weak demand and surging corn. It might be a good idea to go ahead and push sales if adequate corn inputs were not bought last week.