

OFF THE HOOF

Kentucky Beef Newsletter – July 2009

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

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Don't Forget!

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

July 23 UK All Commodity Field Day, Princeton 8 am – 3 pm

September 3 KFGC Field Day, Anderson County

October 27 Kentucky Beef Conference, Fayette County Extension Office 9 am

October 29 10th Kentucky Grazing Conference, Princeton

Timely Tips

Dr. Roy Burris, University of Kentucky Beef Specialist

Spring-Calving Cow Herd

- Fescue pastures tend to go dormant in July and August, so look for alternatives like warm season grasses during this period of time. Try to keep the young calves gaining weight.
- Continue to watch for pinkeye and treat if necessary. Minimize problems by clipping pastures, controlling face flies and providing shade.
- Remove bulls from the cow herd by the end of the month and keep them away from the cows. A short calving season can concentrate labor during the calving season; group calves by age so that it is easier to find a convenient time to vaccinate, castrate, dehorn, etc.; and provide a more uniform group of calves at market time.
- Mid-July (when the bulls are being removed) is a good time to deworm cattle, use a product that is effective against inhibited ostertagia. Reimplant calves which were implanted at birth if the type of implant and amount of time indicate. Calves which haven't been vaccinated for blackleg should be.

Spraying or using a pour-on for flies while cattle are gathered can supplement other fly control methods. Remember to work cattle early in the morning when it is cool and handle them gently to minimize stress.

Fall-Calving Cow Herd

- De-worm cows in mid-July with a product that is effective against inhibited ostertagia.
- Fall-calving cows should be dry and pregnant now. Their nutrient needs are minimal and they can be maintained on poor pasture to avoid overfattening. Keep a good free-choice mineral mix available at all times. You can use a lower phosphorus mineral supplement now, if you want to save a little money.
- Get ready for fall calving and plan to have good pasture available at calving and through the breeding season.
- Replacement heifers should be gaining at an adequate rate to reach their "target" breeding weight.

Stockers

- Sell heavier grazing cattle before rate of gain decreases or they get into a heavyweight category. This will also relieve grazing pressure as pasture growth diminishes. They can be replaced with lightweight calves after pastures recover.
- Lighter cattle which are kept on pasture need to be rotated to grass-legume or warm-season grass pastures to maintain a desirable level of performance. Reimplant these calves and deworm with a product that is effective against inhibited ostertagia.

General

- Be sure that clean water is always available, especially in hot weather. Make routine checks of the water supply. Cattle need 13 to 20 gallons of clean water in hot weather.
- Maintain a weed control program in permanent pastures and continue to "spot-spray" thistle.
- Check pastures for downed wild cherry trees after storms (wilted wild cherry leaves are toxic to cattle).
- Have forage analyses conducted on spring-cut hay and have large, round bales covered. Begin planning the winter feeding program now.
- Start soil testing pastures to determine fertilization needs for this fall.

What's Happening to the Cow Herd?

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

If you've been in this business for a while, you've seen how the nation's cow herd is always changing. History can sometimes be a good teacher so it is probably good to consider where we are now and to reflect on where we have been.

You can't help but notice that most of our cow herds are black hided. That's not necessarily a bad thing but it does raise some questions – (1) are commercial cattlemen ignoring the benefits of crossbreeding or (2) are we practicing single trait selection on things like coat color and marbling while ignoring some of the more functional traits?

Let's take a look back at our history. In the fifties, we selected for small-framed, blocky, compact animals until genetic defects like dwarfism started showing up. We don't see much dwarfism anymore but now we are getting concerned about things like Arthrogyrosis Multiplex (Curly Calf Syndrome), Neuropathic Hydrocephalus and Fawn Calf Syndrome. Maybe that is what happens when we focus on a few traits which cause us to draw from a very narrow gene pool. For example, a lot of Angus cattle which we have been using have one bull (Precision 1680) which appears several times in their pedigrees. I'm no geneticist, but that seems to increase the odds of recessive genes "pairing up". That is kind of like "putting all of your eggs in one basket."

I ran across some old on-farm performance testing records for Kentucky which show how much the cow herd has changed after the small, compact cattle of the fifties.

U.K. On-farm performance data from the 1960's				
Breed	1963		1969	
	Calves	Wean Wt.	Calves	Wean Wt.
Hereford	2463	422	1622	433
Angus	1792	404	2344	399
Shorthorn	494	431	184	401
Charolais	115	505	610	524

The on-farm data likely reflected what was going on in the state and country. It became obvious that continental breeds like Charolais would dramatically improve weaning weight. Until that time, we had mostly British breeds of cattle but with the influx of the continental breeds (Charolais, Limousin, Simmental, Chianini, Main Anjou, etc.) the "chase" was on again. Selection for growth and frame size with many ignoring functional traits like reproduction occurred. Meanwhile, Hereford cattle numbers began to decline. Single trait selection for the polled trait or looking to increase frame probably didn't do the breed any favors.

In the eighties, the other (more maternal) breeds followed suit as they got bigger and bigger. But it would soon be time to shift directions again. As the American Angus Association began to emphasize Certified Angus Beef (CAB), which has been widely successful, the cow herd suddenly became black-hided. Let's be clear about one thing – I believe that CAB has been good for the beef industry and good for the Angus breed.

I certainly don't have any problem with black-hided cattle (that's about all we have at the West Kentucky station) but there are a few things that we should now consider:

1. What about crossbreeding? Hybrid vigor has been described as the closest thing there is to a free-meal. When I was at Mississippi State, our work indicated that, when compared to straight bred cattle, two-breed cross calves weighed about 30 lb more at weaning. Results were even better for 3-breed cross cattle. Calves averaged about 80 lb heavier at weaning when they were out of a two-breed cross cow and a third breed of bull. That's a lot of extra weight to give up. Maybe it's time to rediscover crossbreeding. They can still be black-hided.
2. Don't select for marbling to the detriment of other functional traits. You don't want to end up with a bunch of fine-boned, thin-muscled feeder calves even if they are black. It seems that we are seeing more of these in our graded calf sales now.

3. Seedstock producers should remember that the commercial cattleman is their customer. Produce bulls which will keep them in business in the “real world”. Commercial producers should build their herds with cattle that are functional and reproductively efficient, and resist change just for change’s sake.

Secondary Fermentations: History of Using Bourbon Distillers Thin Stillage

Dr. Jeff Lehmkuhler, Extension Beef Cattle Specialist, University of Kentucky

Last month I presented some general information on the nutrient composition of bourbon wet distillers grains. Previously in *Off The Hoof*, pricing of wet co-products was also covered with respect to adjusting for moisture content and this is critical as the moisture content can vary impacting the price one could pay in relationship to other feedstuffs. Wet bourbon distillers grains are certainly a viable, quality feedstuff that can be utilized within the diets of beef cattle. Looking for older research on using bourbon distillery feed co-products, I found some interesting history dating back some 150+ years. I thought I would share a bit of this with you below.

Utilization of spent grains and thin stillage or slop is not a new concept. In fact, the potential of distillery by-product feeds to reduce production costs was widely recognized by the fermentation industry. In the well known Henry and Morrison Feeds and Feeding sixteenth edition published in 1916, the authors cite Kentucky station reports with respect to feeding slop to finishing cattle along with 3 lbs of cottonseed meal and 10-15 lbs of hay or straw. They also make the following statement with respect to the use of dried distillers grains for dairy cows “This rather bulky feed is one of the best high-protein concentrates for dairy cows, from 2 to 4 lbs. per head daily being usually fed.” In a 1953 Sewage and Industrial Wastes article written by Boruff and Blaine, the authors state “During low production periods there is a great demand for distillers feeds, because replacements are usually in short supply and more costly.” According to articles published in the early 1900’s, many of the distilleries had built feeding facilities and/or dairies near their plants. In 1945, Black, Ellis and Garrigus presented their findings of feeding slop to finishing cattle derived from different grain bills in the Journal of Animal Science which was collaborative work with a Louisville distillery. These authors reported that stillage could be used as the major source of dry matter in finishing diets for cattle when 5 lbs of hay was offered daily. These researchers were actually investigating vitamin A deficiencies occurring when wheat was included in the mash bill reducing the amount of carotenoids in the spent grains.

As with anything new, a lack of knowledge on how to properly utilize these feeds resulted in distillery co-products getting a bad reputation by association with poor animal husbandry. In the mid-1800’s the New York Times reported the health departments were seeking to ban the use of slop from the diets of dairy cows and accomplished this in New York in the late 1800’s. Cincinnati followed with a ban in the early 1900’s. However, in some instances this ban was short-lived as the milk quality issues were pointed out to be more related to sanitary conditions rather than the feed. Adjustments in diets to ensure adequate roughage was offered to livestock became a requirement.

Our understanding of ruminant nutrition has come far since the mid-1800’s. Even though distilleries have been producing these similar feeds for 150+ years, we continue to investigate their feeding value, storage and utilization. Today, research has focused more on the utilization of corn-based fuel ethanol coproducts such as stillage, condensed solubles (evaporated stillage), and distillers grains. Since slop or thin stillage is still used widely around many of the bourbon distillery plants in Kentucky, we’ll briefly discuss recent research regarding the utilization of similar products.

Michigan researchers studied the use of condensed solubles in grain-based finishing diets (Rust et al., 1990). These condensed solubles were not the same as the current condensed solubles marketed which have undergone partial evaporation resulting in much higher dry matter concentrations. These researchers obtained thin stillage from a local plant, allowed the solids to settle for 12 hours, removed the liquid that separated from the top and had a product that was 7.6% DM, 34.6% CP, and 22.8% ether extract or fat. When offered free choice without access to water, steers had similar rates of gain and better feed efficiency than steers not consuming solubles. In this work, cattle without access to water consumed about 49 lbs of condensed solubles or about 5.2% of their body weight. Fisher and coworkers (1999) investigated the use of wheat derived thin stillage for growing and finishing cattle diets. The thin stillage contained on average 6.7% dry matter, 38-42% crude protein, 6.1-9.0% fat, 33.0-39.6% NDF and only 7.0-7.9% ADF. They diluted the thin stillage with water to obtain dry matter concentrations in the thin stillage of 2%, 4% and 6.7% (non-diluted) which was offered ad libitum along with a basal diet. Cattle were fed a 60:40 concentrate to forage basal diet during the growing period. Thin stillage consumption in this work was approximately 44-56 lb/d as-fed or approximately 6% of average body weight. There was a substitution for dry matter intake in which increased dry matter intake of the stillage led to less of the concentrate-forage diet being consumed. Daily gains and overall feed efficiency were similar across the treatments during both the growing and finishing periods. Researchers investigating the use of thin stillage from wheat as a replacement for water in grazing cattle observed gains that were 53% greater or 3 lbs/d versus 2 lbs/d (Ojowi et al., 1996). These grazing cattle consumed 48 liters of thin stillage daily which is 12.7 gallons or 108 lbs using 8.5 lbs/gallon. This was approximately 14% of body weight and much greater than that observed in the previous work when cattle were consuming grain-based diets. This recent research supports the earlier research conducted on the use of stillage as a viable feedstuff in beef cattle diets.

It is important to note that in most of the recent research stillage is not the primary ingredient offered to growing and finishing cattle. Rather stillage was a portion of the daily dry matter consumed. Nutritionists' recommendations are to provide a diet that provides a nutritionally balanced diet that allows for good growth, efficient gains with little risk of nutritional disorders. Thus, producers are cautioned when using these feedstuffs and it is suggested that they contact a nutritionist or their Extension agent for more information for feeding these products. Dr. Gaskill at the University of Kentucky Livestock Disease Diagnostic Center in 2009 reported on a case in which ethanol intoxication resulted from the mixing of a liquid feedstuff with a large amount of fermentable carbohydrates with slop and then fed to cattle. A secondary fermentation resulted in the production of ethanol with the feed containing 2,731 mg/dl of ethanol. The result was 25 dead animals and 40 exhibiting clinical symptoms of ethanol intoxication. A rare and unusual event, but one that none-the-less provides a warning for using these products. Here's to green grass for all of July!

Why Have a Calving Season??

Dr. Glenn Selk, Oklahoma State University Extension Cattle Reproduction Specialist

It's getting later in the summer and folks need to start considering pulling their bulls. I found this little article from a good friend of mine at Oklahoma State University. Les.

One of the most asked questions in the cattle industry in the Southern United States: If I "pull" the bulls out for part of the year, won't I lose an opportunity to get a few calves? Should I leave the bull out with cows year-round?

Here is the answer: A research analysis of 394 ranch observations from the Texas, Oklahoma, and New Mexico SPA (standardized performance analysis) data set provided insight into the age old argument about "leaving the bull out" or having a defined breeding season. Oklahoma State University and Texas A&M Agricultural Economists (Parker, et al) presented a paper at the 2004 Southern Association of Agricultural Scientists. They found a **positive** relationship between number of days of the breeding season and the production cost per hundredweight of calf weaned. Also they reported a **negative** relationship between number of days of the breeding season and pounds of calf weaned per cow per year.

The data suggested that for each day the breeding season was lengthened, the annual cost of producing a hundred pounds of weaned calf increased by **4.7 cents** and pounds of calf weaned per cow per year decreased by **0.158 pounds**. The range of breeding seasons in the data set was from extremely short (less than one month) to 365 days or continuous presence of the bull. The trend lines that resulted from the analysis of the data give us an opportunity to evaluate the economic importance of a defined breeding season. The producer that leaves the bull out year-round (365 days) would sell **45.82 fewer pounds of calf per cow per year** on the average than producers with a 75 day breeding season. That same producer would have **\$13.63 greater costs per hundredweight of weaned calf** than the producer that used a 75 day breeding season. In this era of cost/price squeezes, a well-defined breeding and calving season provides a better opportunity to survive the volatility of cattle prices and input costs.

Source: The Ohio State University Beef Newsletter

Some Ideas on Converting from Year-round Calving to a Controlled Breeding Season *Dr. Les Anderson, Extension Beef Specialist, University of Kentucky*

Maintaining a controlled breeding and calving season can be one of the most important management tools for cow-calf producers. A uniform, heavier, and more valuable calf crop is one key reason for keeping the breeding season short. Plus, more efficient cow supplementation and cow herd health programs are products of a short breeding season. However, converting from a year-long breeding season to a shortened 2 to 3 month breeding season should not be done haphazardly.

A system for converting from year-round to a 75-day controlled calving season over a period of two years would present less loss and fewer problems than to try to convert in one year. The following steps are suggested for getting on a controlled breeding system:

1. Determine the ideal time of year and the length of your new calving season. For example, my cows will calve from February 15th to April 30th (74 days).
2. Determine the reproductive status of each cow in your herd. First, go to your record book to determine the last date each cow calved. If you don't keep records, try to match the cows and calves up and estimate their age. For example, let's assume we have 30 cows. Calving dates from fall 08 to spring 09 are as follows: Last Aug 08 = 0 cows calved, Sept = 2 calved, Oct = 2 calved, Nov = 1 calved, Dec = 0 calved, Jan = 0 calved, Feb = 3 calved, Mar = 9 calved, Apr = 5 calved, May = 5 calved, June = 2 calved, July = 1 just calved. Keep in mind that the 5 cows that calved in the fall are likely pregnant.
3. Based upon the reproductive status of your herd, determine if you would like one, controlled calving season or two. In our example, 5 cows calving in the fall are likely not worth the hassle so they will be held over and should NOT be exposed to a bull until next spring. If, however, half of your herd calved July-December, it is a better economic decision to make these your fall-calving cows and the ones that calve from January-June your spring-calving cows.

4. Build a good strong bull pen or well-fenced bull pasture. An electric fence in addition to the regular fence may be needed.
5. Remove your bull(s) from the herd. Select the removal date to coincide with about a 120 day season for your spring-calving cows. In our example, we would remove the bull(s) near the end of August. He would stay in the bull pen until May 7th of next year.
6. Sixty days after removing the bulls from the herd (or at a convenient time near this date), pregnancy check all cows and cull all non-pregnant dry, breeding-age females that have been running with the bull and all non-pregnant cows with calves 5 months of age or older. Your fall-calving cows have likely either calved or are very close to calving.
7. You may want to consider starting the breeding season of your replacement heifers 20 to 30 days ahead of the final breeding date for your herd. Most extended calving seasons are the result of failure of young cows to rebreed in a timely fashion. The additional 20-30 days enhances the opportunity for these young cows to rebreed next season. So, your replacement heifer breeding season would start around April 10th and these females would begin calving around January 20th. I realize that this is a bit early for calving and you might experience 1-2% higher calf death loss. Financially, 1-2% death loss is easier to swallow than a 25% decrease in pregnancy rate the following year.
8. The second year, follow the same system as outlined about except remove the bull on the week of July 20th. If you have fall and spring calvers, then put the bull in for the fall cows around November 20th and remove him around January 20th.

Targeted Reproductive Management: Bob Hornsby's Method to Shorten the Calving Season

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

One of the primary factors that reduce profitability for Kentucky's beef cow-calf producers is a low reproductive rate. On average, only 80-85% of cows that are turned out with a bull conceive during the breeding season and only 75-80% of the herd actually weans a calf. This level of productivity makes earning a profit hard to achieve.

One method to improve reproductive performance of your cow herd is to synchronize estrus prior to bull turn out. Studies conducted at UK have demonstrated that treatment of cows with a CIDR device for 7 days before natural service can have increase pregnancy rate 5-15% and can increase the proportion of cows that calve in the first 30 days of the breeding season. Our most recent data indicates that the CIDR devices only need to be inserted in cows that are likely to have trouble conceiving early in a breeding season; late-calvers and two-year old cows. By "targeting" our reproductive management to these cows, we can improve the whole herd performance and limit our input costs.

Today I witnessed yet another example of the successful application of this technique at Bob Hornsby's ranch in Jackson County. Mr. Hornsby calves about 150 cows and prefers his herd to calve starting the second week of February. Like many of us, the calving season had gotten a bit longer in Bob's herd that he preferred as several of his cows were calving in late April and May. Bob inserted a CIDR device into his April and May calving cows and all his two year olds (25 total cows). The reproductive performance of this group of cows was super. Most (17) conceived in the first 30 days of the breeding season, 5 conceived in the next 40 days, and 3 were open. All three of the open cows were two-year olds. One was pretty thin, one calved at the end of April, and the third didn't have an excuse; she just didn't breed back. All the late-calving mature cows conceived. The simple application of the CIDR device greatly enhanced reproductive performance as nearly 70% of the "problem" cows in this herd conceived early and nearly

90% conceived during the breeding season. This outcome confirms data from controlled experiments which indicate the tremendous economic impact of synchronizing estrus in cows before natural service.

Roberts Agricultural Commodity Market Report

Mike Roberts, Commodity Marketing Agent, Virginia Tech University

LIVE CATTLE futures on the Chicago Mercantile Exchange (CME) gained on short covering and buy stops Monday. The AUG'09LC contract closed up \$2.150/cwt at \$84.625/cwt; \$1.775/cwt higher than this time last week. DEC'09LC futures closed at \$90.250/cwt; up \$1.575/cwt and \$2.425/cwt higher than last report. Action was brisk with approximately 400 limit-up bids unfilled in the August contract at the close. Early buying sparked the advance and fueled fast action at times, according to floor sources. Beef demand looks better with slaughter still up placed at 130,000 head last week vs. 127,000 this time last year. Cash cattle prices were level with last week's trade and several traders said they expect them to strengthen going against the seasonal slump in beef prices. However, tight supplies on negative producer margins have decreased stocks. Packers may pick up the buying pace this week to keep processing lines full but the shortened processing week may keep the lid on. USDA's 5-area price average was placed at \$81.63/cwt. Early Monday USDA put the Choice Boxed Beef cutout at \$139.38/cwt, up \$0.45/cwt but \$1.71/cwt lower than a week ago. A beef recall of 421,000 lbs did not seem to affect trading. According to HedgersEdge.com average packer margins were raised \$4.85/head to a positive \$13.55/head based on the average buy of \$81.51/cwt vs. the average breakeven of \$82.57/cwt. It is still a good idea to hold cattle to heavier weights if you can. If you need corn now is good time to buy near-term needs.

FEEDER CATTLE at the CME rose sharply on Monday. AUG'09FC futures finished at \$101.725/cwt; up \$2.750/cwt and \$2.800/cwt higher than last report. The OCT'09FC contract closed at \$101.325/cwt; up \$2.750/cwt and \$2.275/cwt higher than this time last week. Live cattle and lower feed costs on top of short covering and buy-stops were very supportive. October/January bull spreads were noted. The latest CME Feeder Cattle Index was placed at \$97.67/cwt, up \$0.44/cwt and \$1.30/cwt higher than a week ago. It is a very good idea to move feeders when ready.