

# OFF THE HOOF

*Kentucky Beef Newsletter – May 2007*

---

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

## **Timely Tips**

*Dr. Roy Burris, UK Beef Specialist*

### **Spring-Calving Cow Herd**

- Bulls should have a breeding soundness evaluation (BSE) well before the breeding season. They should also receive their annual booster vaccinations and be dewormed.
- Schedule spring or "turn-out" working in late April or early May - at the end of calving season and before the start of breeding season. Consult with your veterinarian about vaccines and health products for your herd. Turn-out working for the cow herd *may* include:
  - Prebreeding vaccinations
  - Deworming
  - Replacing lost identification tags
  - Sort cows into breeding groups, if using more than one bull
  - Insecticide eartags (best to wait until fly population builds up)Turn-out working of calves may include:
  - Vaccinate IBR-PI<sub>3</sub>, Clostridial diseases and Pinkeye
  - Dehorn, if needed (can be done with electric dehorner and fly repellent during fly season)
  - Castrate and implant male feeder calves (if not done at birth)
  - Deworm
  - Insecticide eartags
- Begin breeding cows no later than mid-May, especially if they are on high endophyte fescue. Cows should be in good condition so that conception occurs prior to periods of extreme heat.
- Start breeding yearling replacement heifers one heat cycle (about 21 days) earlier than cows for "Head-start" calving. Mate to known calving-ease bulls.
- Choose the best pastures for grazing during the breeding season. Select those with the best stand of clover and the lowest level of the fescue endophyte, if known. Keep these pastures vegetative by grazing or clipping. *High quality pastures are important for a successful breeding season.*
- If using **artificial insemination**:
  - Check the herd at least twice daily (early morning and late evening) to observe cows in heat (Confining cows to a limited grazing area will ease this chore).
  - Use an experienced inseminator.
  - Make positive identification of cows and semen used. This will permit accurate records on date bred, return to heat, calving date and sire.
  - Good handling facilities and gentle working of the cows are essential.

- Observe breeding pastures often to see if bulls are working. Record cows' heat dates and then check 18-21 days later, for return to heat.
- Record identification of all cows and bulls in each breeding group.
- Continue supplying a high magnesium mineral until daytime temperatures are consistently above 60 degrees F.

### **Fall-Calving Herd**

- Pregnancy check the cow herd. Remove open cows at weaning time.
- Let fall calves remain with cows during the spring “flush” of pasture for heavier weaning weights.
- Plan marketing program for calves. Consider various options, such as maintaining ownership and backgrounding in a grazing program.
- Weaned calves can be conditioned by feeding a complete dry ration for a short period of time after vaccinating, deworming and implanting.
- Initiate fly control for the cows when fly population builds up.

### **Stockers**

- Keep calves on good pasture and rotate pastures rapidly during periods of lush growth. Manage to keep pastures vegetative for best performance.
- Control internal and external parasites.
- Provide mineral mix with an ionophore.
- Implant as needed.

### **General**

- Harvest excess pasture as hay. *Work around the weather and cut early before plants become too mature. Harvesting forage early is the key to nutritional quality.*
- Clip pastures to prevent seedhead formation on fescue and to control weeds.
- Rotate pastures as needed to keep them vegetative.
- Seed warm season grasses this month.

### **DDG's; By-product or Co-product?**

*Dr. Roy Burris, UK Beef Specialist*

I recently had a phone conversation with someone that was working on a feasibility study for yet another ethanol plant. The question that was being posed to me was the value of the distillers grain that would be produced as part of the process and how readily it would be consumed by cattle in the area. I answered with a question, “will it be a co-product or by-product?”.

Most feasibility studies are incorporating the value of distillers into their studies as a co-product. A co-product is something that is produced for its value, along with something else – like ethanol. A by-product is something that is not as valuable as a co-product and may, in fact, be a problem to get rid of. As an example, when crushing soybeans for oil, you also obtain soybean meal and soyhulls. A few years ago, soybean meal was a co-product and soyhulls were a by-product (not much value). Since a demand for soyhulls has developed, they have become a co-product. So, what is my point? Well, if there is so much distillers grain produced that it can't readily be used then it is a by-product ... should be valued considerably less ... and would be more attractive as a cattle feed.

Why do I think it might be a by-product? Let’s do the math. Each bushel of corn produces 2.7 gallons of ethanol and 18 lbs. of dried distillers grain plus solubles. There are several ethanol plants on-line that will produce 100 million gallons of ethanol annually (the one we were talking about was being projected at 200 million gallons annually). Each plant that produces 100 million gallons of ethanol annually will require 37 million bushels of corn and yield 333,000 tons of distillers grain on a dry basis. So, I ask you “co-product or by-product?” Probably, a by-product which means that it can be attractive to work into cattle rations.

I would recommend that it be used as a protein supplement – not the principal feed – since it will be about 30% crude protein and phosphorus, potassium and sulfur will be concentrated at fairly high levels. Sulfur can cause copper deficiencies and polioencephalomalacia (brainers) in cattle. It also has a high (~10%) fat content. Distillers grain is an excellent protein source. The problems come with overfeeding it.

Therefore, it is necessary to place some limits on feeding it to beef cattle. Distillers grains can be fed at 10 to 15% of the diet dry matter as a source of protein in backgrounding and finishing diets. It can be used as an energy source of up to 20% of the diet but wet distillers grain can go a little higher. The effect of replacing corn with distillers grain on marbling of finishing cattle might also be a problem. In forage based diets for beef cows, it can be used as a source of protein and energy – usually up to 4 lb/hd/day on a dry basis. It can also be used dry in creep feeds but should make up no more than 50% of the creep feed.

Using these numbers, it may be difficult to use up all of the distillers grain that will become available. However, beef producers will be looking for alternatives to feeding expensive corn but we will expect a “break” on the price of distillers grain before we feed it in any great amounts. My philosophy hadn’t changed – the best alternative to corn in beef cow and backgrounding diets is forage.

<b>Table 1. Nutrient composition of ethanol coproducts.</b>				
<b>Nutrient</b>	<b>Dried Distillers Grains</b>	<b>Dried Distillers Grains plus Solubles</b>	<b>Modified Distillers Grains plus Solubles</b>	<b>Wet Distillers Grains</b>
DM, %	88 to 90	88 to 90	50	25 to 35
<b>DM Basis</b>				
TDN, %	77 to 88	85 to 90	70 to 110	70 to 110
NEm, Mcal/cwt	89 to 100	98 to 100	90 to 110	90 to 110
NEg, Mcal/cwt	67 to 70	68 to 70	70 to 80	70 to 80
CP, %	25 to 35	25 to 32	30 to 35	30 to 35
DIP, % CP	40 to 50	43 to 53	45 to 53	45 to 53
UIP, % CP	50 to 60	47 to 57	47 to 57	47 to 57
Fat, %	8 to 10	8 to 10	8 to 12	8 to 12
Calcium, %	0.11 to 0.20	0.10 to 0.20	0.02 to 0.03	0.02 to 0.03
Phosphorus, %	0.40 to 0.80	0.40 to 0.80	0.50 to 0.80	0.50 to 0.80
Potassium, %	0.49 to 1.08	.087 to 1.33	0.70 to 1.00	0.50 to 1.00
Sulfur, %	0.46 to 0.50	0.37 to 0.46	0.38 to 0.70	0.46 to 0.70

Table adapted from:

- 1) Stock, et al. 1995. Average Composition of Feeds Used in Nebraska. G1048. <http://www.ianr.unl.edu/pubs/beef/G1048.pdf>
  - 2) Tjardes and Wright. 2002. Feeding Corn Distiller’s Co-Products to Beef Cattle. South Dakota State University. ExEx. 2036.
  - 3) NRC. 2001. Nutrient Requirements of Dairy Cattle.
- Products vary and this may not represent what a particular plant is producing at any given time.

## **Factors Affecting the Summer Cattle Market**

*Kenny Burdine and Dr. Lee Meyer, Livestock Marketing Specialists, University of Kentucky*

High corn prices, caused by pessimism about small carryover, strong exports, and growing ethanol interest, pushed Kentucky cattle prices down over the winter. But, larger than expected corn plantings and strong fed cattle prices pulled Kentucky stocker and feeder cattle prices back near last years' lofty April levels. Now as we move into May, there are signs that seasonal price declines may be setting in.

As always, grass demand starts to ease my mid-May, and there is little reason to suggest that this year will be any different. Also, many analysts are projecting sizeable declines in slaughter cattle prices between now and summer. As live cattle prices decline, feeder cattle prices tend to follow them down. Still, the single biggest factor driving feeder cattle prices this summer will be the 2007 corn crop.

Although USDA's planting intentions report did indicate farmers intended to plant 90.5 million acres of corn this spring, we won't know how many acres were actually planted for a few months. There are always questions about how corn planting progresses and how the crop develops during the summer. Questions like this tend to cause volatility in corn prices within the growing season. Since overall supplies were tighter than usual coming into 2007, prices could be more volatile than usual. And, we all know that volatile corn prices mean volatile feeder cattle prices. In a year like this, producers should place heavy emphasis on efficiency, cost control, and managing price risk.

Summer grazing programs continue to look profitable, with weather being an obvious wildcard. In general, high corn costs lead to profitable grazing enterprises. On a practical basis, the normal buy/sell price margin for grazing cattle is -\$16/cwt., and efficient operations can make money. This year should be about normal. The futures-based price forecast for 750 lb. steers in the fall is about \$1.05/cwt. With 450 weight steer calves selling for \$1.22 now, the buy/sell margin would be -\$17 (Kenny Burdine and Lee Meyer).

## **Heterosis.....Hype or Legit?**

*Robert Wells, Ag Specialist, Noble Foundation*

For as long as the beef industry has existed, crossbred commercial cattle operations have made up the lion's share of the beef cattle population, and those "in the know" were telling producers to "clean up their acts." Now, it seems every publication you read or every expert you hear is talking about heterosis. So, you ask, "What's this fancy word 'heterosis,' and can I capitalize on it in my herd?" Well, simply put, heterosis is hybrid vigor. At the Noble Foundation's recent Beef Cattle Female Selection School, livestock specialist Clay Wright defined hybrid vigor as "the added advantage in performance of a crossbred over the average of its purebred parents." So, you say, "Hey, I've been doing things right all along and didn't even know it, right?" Well, not so fast...

There is more to hybrid vigor than just taking a crossbred cow and breeding her with any old bull. Numerous studies have been conducted over the years to look at this very subject. If you want to take full advantage of this phenomenon, there has to be some thought put into the process.

Hybrid vigor is most fully expressed when you use bulls and cows of known ancestry - not just breeding any bull to a cow you pick up from Joe down the road or you bought at the sale barn because the price was right. Work conducted at Texas A&M University by Dr. Jim Sanders has shown a 10 to 20 percentage point increase in calf crop born to F1 cows (a cow which is a first-generation cross between two breeds)

when compared to straight-bred cows. The advantage will fall dramatically when F2 (F1 x F1 bred cows) or greater cows are used.

One of the most effective and simplest ways for calves to exhibit hybrid vigor is to use an F1 cow and a pure-blood bull of known performance and ancestry; this is what the Foundation livestock specialists have been suggesting to certain cooperators. Use of a pure-blood bull allows the producer to have some predictability of how the bull's progeny will perform. The prediction is made through the bull's EPDs. In the Foundation publication *Crossbreeding Beef Cattle for Western Range Environments*, Don Kress and Michael MacNeil stated that an average F<sub>1</sub> crossbred cow returns up to \$70 more per cow per year than the average straight-bred cow. To arrive at this number, they looked at the various traits (Table 1) that cross breeding affects and the advantage that hybrid vigor afforded to or detracted from the calf.

Trait	Individual heterosis <sup>a</sup> %	Maternal heterosis <sup>a</sup> %	Total heterosis <sup>a</sup> %
Calving rate	0	6	6
Weaning rate	0	8	8
Weaning weight	5	6	11
Yearling weight	4	.	4
% reaching puberty @ 15 mo.	15	.	15
Cow longevity	.	.	38
USDA carcass grade	2	.	2
Days on feed	-4	.	-4

<sup>a</sup> Individual heterosis = single crossbred (A x B); maternal heterosis = crossbred cow x purebred bull (AB x C); total heterosis = the additive effect of both systems  
From *Crossbreeding Beef Cattle for Western Range Environments* by Don Kress and Michael MacNeil

After studying the table, it becomes obvious that a well-thought-out terminal crossbreeding program can work for many beef producers. Breeding a pure-blood bull to a crossbred cow is one way to maximize hybrid vigor (total heterosis in right-hand column of table). Research has shown, though, that taking crossbred bulls and breeding them with crossbred cows reduces the amount of hybrid vigor that can be expected. This is the reason the Foundation's livestock discipline is recommending an F1-type cow bred to a straight-bred bull of known performance data (EPDs) and ancestry.

It does not matter if you are selling your calves at weaning, as yearlings or retaining ownership through the feedlot; you cannot afford to give up the advantages that hybrid vigor will convey to your bottom line.

## **Roberts Agricultural Commodity Market Report**

*Mike Roberts, Commodity Marketing Agent, Virginia Tech University*

LIVE CATTLE on the Chicago Mercantile Exchange (CME) finished up on Monday. APR'07LC futures closed at \$97.30/cwt, up \$.250/cwt but \$3.600/cwt lower than last week at this time. The JUNE'07LC closed at \$92.90/cwt up \$0.20/cwt on the day but \$3.80/bu lower than last Monday. Short covering provided some support late in the day as futures recovered somewhat from last week's losses. Cash cattle are viewed as steady for this week and are expected to keep futures in a narrow trading range. Boxed beef prices lost ground but can be expected to gain back some as spring grilling picks up. Cash cattle traded

lower last week with USDA placing the 5-area-weekly-weighted-cattle-price at \$99.97/cwt, up over \$4.00/cwt from the previous week. Prices reached highs not seen in 3 ½ years slowing cash sales toward the end of last week. USDA put the choice beef cutout at \$169.18/cwt, off \$0.49/cwt. According to HedgersEdge.com, the average beef plant margin for Monday was estimated \$12.45/head lower at \$18.95/head but \$5.35/head better than a week ago. Also supportive of prices are early estimates that cattle on feed numbers will be down 1.9%-3.6% of last year when USDA's Cattle on Feed report comes out on Friday. March placements are expected to range from 100.9%-112% of a year ago while marketings are expected to range from 95.5% -100% of a year ago. Lower corn futures provided support for fat cattle. The latest CME Feeder Cattle Index, for April 12, was off \$0.49/cwt at \$108.73/cwt. Cash sellers are still encouraged to push sales this week. Additionally, it is still a very good idea to forward price feed grain inputs this week.

FEEDER CATTLE at the CME finished up on Monday. Recovering from two week lows just posted, the APR'07FC contract closed up \$.475/cwt at \$107.725/cwt but \$4.175/cwt lower than last week at this time. The MAY'07 contract closed at \$108.050/cwt, up \$0.800/cwt and it too was \$4.70/cwt lower than last Monday's close. Feeder cattle futures found buyers among funds and other large speculators during the day on lower corn futures and the discount to the CME Feeder Cattle Index. The latest CME Feeder Cattle Index for April 12 was \$108.73/cwt. Cash sellers should keep feeder cattle sales current. As previously stated, it is a very good idea to forward price feed grain inputs this week.