UK COOPERATIVE EXTENSION SERVICE
University of Kentucky – College of Agriculture

LEXINGTON, KY 40546

OFF THE HOOF

Kentucky Beef Newsletter – May 2013

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

Contents

This month's newsletter includes:

Timely Tips

Dr. Roy Burris, University of Kentucky Beef Specialist

Spring-Calving Cow Herd

- Improve or maintain body condition (BCS 5) of cows before breeding season starts.
- 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 of "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 for IBR-PI3, 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

- Choose 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.*
- Continue supplying a high magnesium mineral until daytime temperatures are consistently above 60 degrees F.
- 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.
- Consider breeding yearling replacement heifers one heat cycle (about 21 days) earlier than cows for "Head-start" calving. Mate to known calving-ease bulls.
- If using **artificial insemination:**
  - Check the heard at least twice daily (early morning and late evening) to observe cows in heat (Confining cows to a limited grazing area will east 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.

- Record identification of all cows and bulls in each breeding group.
- Observe breeding pastures often to see if bulls are working. Records cows' heat dates and then check 18-21 days later, for return to heat.

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, unless cows are really thin – then you might go ahead with weaning.
- Plan marketing program for calves. Consider various options, such as maintaining ownership and backgrounding in a grazing program, or precondition and sell in a CPH-45 feeder calf sale.
- 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 hay. *Work around the weather and cut early before plants become too mature. Harvesting forage early is the key to nutritional quality.* Replenish your hay supply! Grass seems to be later than usual this year, so that could delay harvest some.
- 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.

Spring Breeding on Fescue Pastures

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

Most Kentucky beef producers have spring-calving cow herds that graze fescue pastures which have high endophyte levels. Getting a high percentage of cows bred in May, June, and July to calve in March, April, and May can be a challenge. I personally prefer fall-calving for that reason, but I also believe that we can have successful breeding performance in the spring.

There are some keys to getting a high percentage of cows pregnant for a spring calving season. The most general problem, in my opinion, is that the winter feeding program isn't adequate to support required body condition for early rebreeding. Cows should enter the breeding season in good body condition (Body Condition Score 5) which doesn't always follow our winter feeding programs. It seems that we sometimes try to "rough 'em" through the winter and hope that spring grass will "straighten them out". That is a sure formula for delayed breeding or open cows. Spring-calving cows need to conceive early in the breeding season (before late June) for best results. We conducted a trial at the UKREC (Western Kentucky) several years ago in which similar cows were separated into three breeding periods of 45-days each on high-endophyte fescue – see Table 1. Cows which were exposed to bulls from June 19 to August 4 had a pregnancy rate of only 59%. At this location, the average maximum daily temperature reaches 90°F by about June 20. This elevated temperature, coupled with the endophyte that is present in most fescue pastures, likely contributed to that decreased performance.

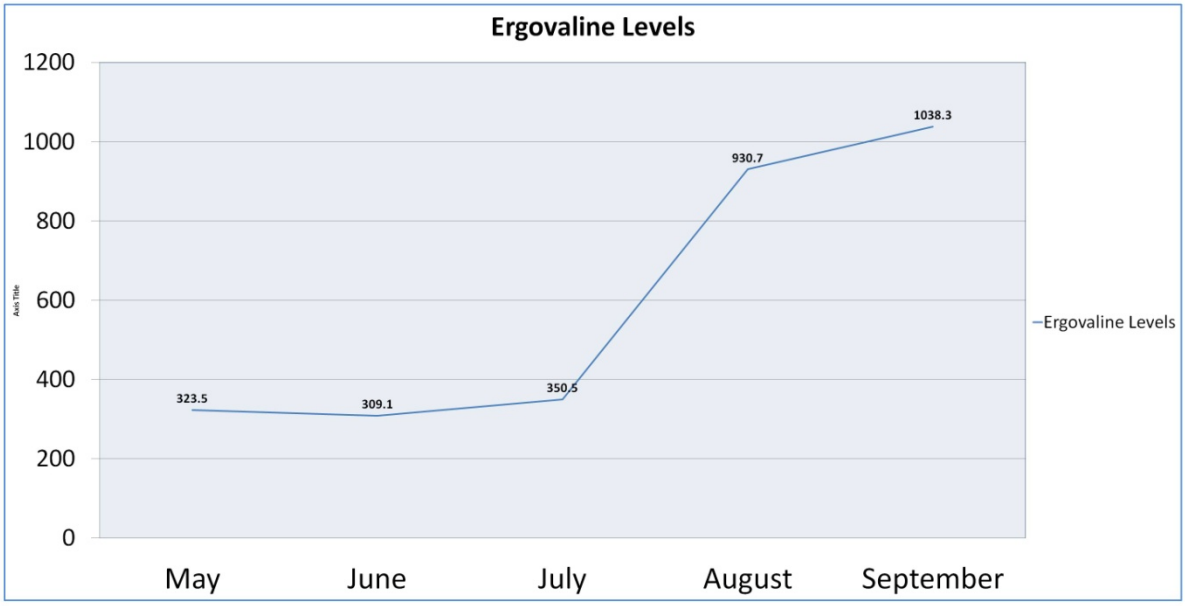
Table 1. Effect of time of breeding on beef cows grazing high-endophyte fescue 1992, 1993 (UKREC).

Item	Timing of breeding		
	4/21 – 6/5	5/21 – 7/6	6/19 – 8/4
Pregnancy rate	33/37[a]	29/37[a,b]	16/27[b]
(%)	89.2	78.4	59.3

[a,b] Means on the same line with different superscripts are different (P < .05).

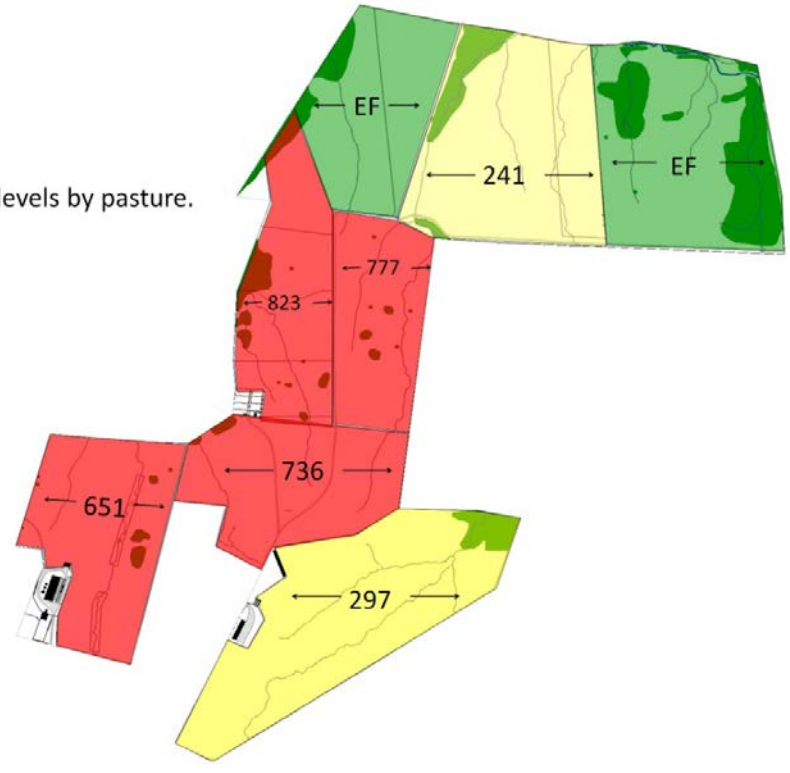
We have also measured the alkaloid levels in high-endophyte fescue at this location. Since the primary culprit in toxicity of high endophyte pastures seems to be ergovaline, let's look at ergovaline levels (Figure 1) across the growing season. After our July (about July 10) measurement, the ergovaline levels increased dramatically. So this toxicity, coupled with high temperatures, appears to mean that breeding will not occur at acceptable rates in July, August and September. Therefore, cows need to be pregnant by the end of June for best results.

Figure 1.
Ergovaline Levels by Month(UKREC 2011)



Ergovaline levels differed greatly by pasture, too (see figure 2). That information could make it possible to avoid the "hot" pastures during the summer months. The trial in Table 1 was conducted in the "hot" pasture (unbeknown to us). The two yellow pastures are high endophyte but always gave better than expected results in past years. The ergovaline levels can explain a lot. Armed with this information, we would prefer to be in the yellow areas during heat stress and breeding.

Figure 2.
Average ergovaline levels by pasture.
(UKREC) 2011



There are several other keys to a successful breeding season. Obviously, fertile bulls are extremely important and breeding soundness evaluations (BSE) are essential. Think fertile bulls and cycling cows! A complete mineral supplement needs to be available on a year-round basis. If artificial insemination (AI) is used, that brings on the need for managing the details of AI and estrous synchronization protocols.

In the short run, don't let cows lose condition as the breeding season nears. Lush, watery grass might not support regaining condition after calving, peak milk production and rapid re-breeding. Do whatever it takes to get 'em bred and bred early!

Does Your Pour-On Dewormer Work?

Dr. Michelle Arnold, Large Ruminant Extension Veterinarian, University of Kentucky

Deworming beef cattle has become a standard practice on many beef cattle farms. Producers preventively deworm their cattle at strategic times of the year to prevent diarrhea, ill-thrift, and other economic losses caused by parasitism. Pour-on dewormers are exceptionally popular because they are safe and easy to use, they are considered effective against internal and external parasites, they have a long duration of action, and many generic formulations are available at an attractive price. Do these dewormers work? Parasite resistance to the class of compounds known as the macrocyclic lactones that include ivermectin (Ivomec®, Ivermectin-generic formulations), doramectin (Dectomax®), eprinomectin (Eprinex®, LongRange®), and moxidectin (Cydectin®) is becoming more common throughout the United States. Additionally, the pour-on formulations perform generally worse than the injectable formulations in research trials. Fortunately good results can still be obtained with the products available on the market today but care must be taken in using parasite control programs that may favor continued selection for and expansion of resistance to these drugs.

Knowing whether or not a dewormer is effective is extremely important but it is not necessarily easy to do. The test most commonly used is the Fecal Egg Count Reduction Test or "FECRT". This basically involves taking a fecal sample from an animal (the sample will be sent to a laboratory for a fecal egg count) and then administering the correct dose of a dewormer. A second fecal sample is taken from the same animal 14 days later that is also sent to the same laboratory for a fecal egg count. If the dewormer worked effectively, there should be at least a 90% reduction in the number of eggs from the first sample to the second sample. "Resistance" is present when the normal dose of the drug fails to give at least the 90% level of control. This test is not considered exceptionally accurate on an individual animal basis so it is recommended to sample a group of sufficient size (20 is advised) in order to reduce the sample variation.

In 2007-2008, free laboratory testing was offered to veterinarians to conduct FECRTs on their client's herds. In the tables below are the results from that trial published in the Proceedings of the American Association of Bovine Practitioners (AABP) in a manuscript entitled "Parasite Resistance in US Cattle" by Donald Bliss, PhD, Robert Moore, MS and William Kvasnicka, DVM. Veterinary clinics in 19 states sent a total of 4,765 samples for FECRTs using a wide range of products and formulations. The conclusion, based on the percent efficacy of the macrocyclic lactone injectables and pour-ons, is that macrocyclic lactone resistance is present in US cattle. This resistance is potentially costing producers millions of dollars in unrecognized losses from internal parasites including reduced milk production, reduced weaning weights, delayed puberty, decreased fertility and pregnancy rates, reduced feed intake, reduced feed efficiency and immune suppression in all classes of cattle.

Table 1. ¶ Efficacy of macrocyclic lactone injectable formulations from FECRTs* conducted by veterinary practitioners and submitted to Intervet's national database.

Product	Number of trials	Number of samples	Pre-RX Egg counts/3 g**	Post-Rx	Percent efficacy (%)
Injections:					
Ivomec® Ini.	6	162	55.5	13.2	76.2%
Ivomec® Plus	6	257	120.4	69.1	42.6%
Dectomax® Ini.	11	362	43.6	4.4	89.9%
Cvdectin® Ini.	2	64	246.1	4.7	98.1%
Ivermectin Inj.	1	40	33.0	16.5	50.0%
Inj. Summary:	26	884	79.2	21.8	72.5%

*Fecal egg count reduction tests.
****** All samples taken at treatment and again two weeks post-treatment.
¶ Table reprinted with permission of Dr. Donald Bliss

Table 2. ¶ Efficacy of macrocyclic lactone pour-ons from FECRTs* conducted by veterinary practitioners and submitted to Intervet's national database.

Product	Number of trials	Number of samples	Pretreatment Egg Counts/3 gms Feces	Post-Rx	Percent efficacy (%)
Pour-ons:					
Ivomec® PO	8	366	45.8	12.7	72.3%
Ivermectin PO	35	1.437	53.6	21.6	59.7%
Dectomax® PO	8	318	89.2	18.8	78.9%
Cydectin® PO	9	365	45.1	14.8	67.2%
Pour-On summary	60	2,486	56.0	19.0	66.1%

* Fecal egg count reduction tests.
**All samples taken at treatment and again two weeks post-treatment.
¶ Table reprinted with permission of Dr. Donald Bliss

Table 3. ¶ Efficacy of Safe-Guard®/Panacur® in combination with various macrocyclic lactone formulations from FECRTs* conducted by veterinary practitioners and submitted to Intervet's national database.

Combination product	Number of trials	Number of samples	Egg counts/3g** Pre-Rx	Post-Rx	Percent efficacy (%)
Safe-Guard/Panacur Drench plus:					
Ivomec® Inj.	3	59	88.2	0	100.0%
Ivomec® Plus	1	40	30.7	0	100.0%
Ivermectin PO	3	118	30.8	0.1	99.9%
Dectomax® Inj.	1	20	389.4	0	100.0%
Cydectin® Inj.	1	24	583.0	0.2	99.9%
Summary	9	261	152.1	0.1	99.9%

* Fecal egg count reduction tests.
**All samples taken at time of treatment and again two weeks post-treatment.
¶ Table reprinted with permission of Dr. Donald Bliss

What is resistance? Resistance can be defined as the ability of a parasite to withstand the normal effects of a drug when that drug was previously known to be effective. This change occurs at the level of the gene, either as a mutation, recombination, or production of a new gene sequence that allows the parasite to survive and pass this trait on to its offspring. The extraordinary effectiveness of the macrocyclic lactones in cattle has led to their intensive and sometimes exclusive use over many years and has resulted in resistance issues. In the field, the detection of resistance is usually based on the FECRT. However, this test does have limitations; for example, an incorrect dose of dewormer may be administered that slows egg production by female worms but does not actually kill the worms. A better test (the "Gold Standard") is the controlled efficacy test in which a number of animals are dewormed then the animals are killed 1-2 weeks later. The worms are removed from the abomasum and intestines, identified and counted. This test is rarely used due to the high cost of sacrificing animals and the labor-intensive process of harvesting the parasites. However, in the trials that have been performed, the resistant parasites that typically survive anthelmintic treatment include *Haemonchus placei* and *Haemonchus contortus* in the abomasum and *Cooperia punctata* in the small intestine. One drug family that is consistently effective against *Cooperia* species is the benzamidazoles or "white wormers" (Safeguard, Valbazen, and Synanthic) that are administered as a drench (by mouth). When a benzamidazole (Safe-Guard®/Panacur®) was used in combination with a macrocyclic lactone in the Intervet nationwide trial, the efficacy was excellent (99-100%) as evidenced in the table.

Remember there are basically two fundamental goals of effective parasite control in cattle. The first is protection of the host from disease with concurrent enhancement of performance. The second goal is to reduce contamination of the pasture by eliminating worm-egg shedding. These goals are accomplished by killing all stages of the roundworms including adults and larvae (L_4, inhibited L_4, and infective L_3 stages) found inside the cattle. The timing of the deworming is very important; considerations include the season of the year, type of grazing programs practiced, and the overall management goals of the operation. Always work with your veterinarian to determine what will work best for your unique situation. Treat cattle at the recommended rate-this includes accurate animal weight, correct drug volume, and careful

delivery of the product. Basic recommendations for when to treat beef cattle and what to use for nematode or roundworm infections in Kentucky are as follows:

1. Spring treatment of cows – Deworming in the spring, especially the cows that calve in the spring, significantly reduces pasture contamination and risk for parasitic problems in calves throughout the summer. Use of a macrocyclic lactone is encouraged because of the residual activity needed in the spring of the year when larvae populations are flourishing in the pastures.
2. Summer treatment of the herd – Deworming in late June/early July is very effective because most of the worms are inside the cattle instead of on the pasture. Larvae do not survive hot, dry weather so many infective parasites in the environment die in the midsummer heat in Kentucky. Properly treating cattle in the summer will effectively remove the *Ostertagia* larvae that hibernate in the stomach and damage the abomasal glands. Calves need deworming as they transition from an all-milk diet to grazing grass and will typically benefit from deworming after they reach 6-8 weeks of age. Use of a macrocyclic lactone is encouraged for the persistent activity and fly control they provide.
3. Fall deworming is not exceptionally important in spring calving adult cattle but is a necessity for all others. Fall calving cows should be dewormed as well as all cattle on heavily infected pastures due to overcrowding or extended periods of moist, cool fall weather. Deworming of young stock (weaned calves, replacement females, and yearling bulls) is exceptionally important in the fall as animals less than 2 years old are much more susceptible to the deleterious effects of parasitism. In the fall, use of a benzamidazole or "white wormer" drench (Valbazen, Synanthic, or Safeguard) in conjunction with a pour-on for insect control is encouraged. The white wormers are exceptionally effective against the hard-to-kill small intestinal worm *Cooperia*, and a long duration of action is not critical in the winter.

Although the extent of resistance in the US remains unknown, it is essential to recognize that anthelmintic resistance does exist in the US, and that care must be taken in using parasite control programs that may favor continued selection for and expansion of resistance to the drugs. By overuse of one type of drug, one can very easily select for cattle parasites that are not going to respond at the labeled therapeutic dose. Work with your veterinarian to explore the options available in order to keep dewormers working effectively as long as possible.

Kentucky Beef Cattle Market Update

Kenny Burdine, Livestock Marketing Specialist, University of Kentucky

Early May brings much the same story as last month. The cattle market continues to struggle to find some traction. Summer and fall CME© feeder cattle futures rallied nicely at the end of March, only to drop back within a couple weeks. They pushed upward again later in the month, but have dropped back down at the time of this writing. Much was made of the Choice cutout breaking the $200 per cwt level during the first full week of May and the Choice / Select spread has really widened over the last 4-6 weeks, currently sitting at over $10 per cwt. However, the effect on fed cattle prices has been minimal and winter CME© live cattle futures remain in the mid-$120's.

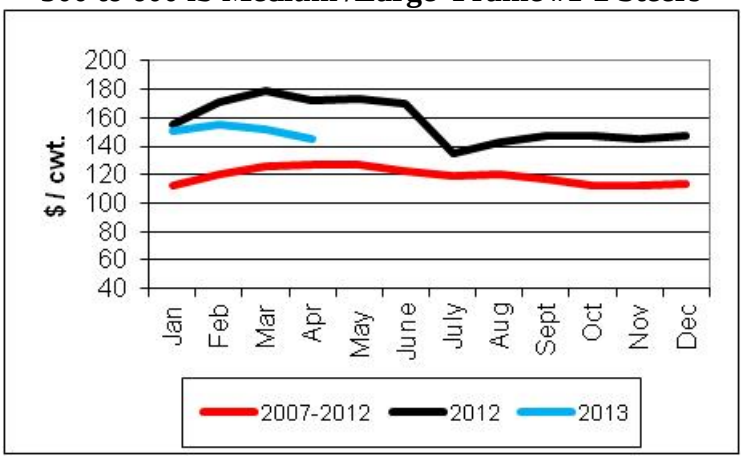
While the weak live cattle futures market has not helped, feeder cattle prices have been further hurt by significant delays in corn planting. According to USDA's crop progress report, only 12% of the corn crop was planted as of May 5, 2013. This compares to 69% at the same time in 2012 and 47% on average from 2008-2012. I can't overstate the importance of this corn crop to the feeder cattle markets. Currently, December CME© corn futures are trading at a $1.40 per bushel discount to May. Put simply, the market is

expecting a corn crop large enough to ease supply pressure and our fall feeder cattle market will be heavily dependent on how that develops.

Kentucky feeder cattle prices may have actually gained slightly during the past few weeks. This, along with continual erosion of the May CME© feeder cattle futures price, has put basis levels closer to historical levels. While there is always a wide range in prices, for the week ending May 3, loads of 8wt feeder steers in the state seemed to be moving well into the $120's and many groups of 7wts were trading above $130. Calf prices have remained relatively flat, with state average mid-point of the range prices for 500 to 600 lb steers around $145 and most groups trading with $5-$10 of that level.

As of settlement on May 8, 2013, August CME© feeder cattle futures were trading a little over $145 and October was trading a little under $149. These are sure to change as we move through spring and summer, but I wanted to quickly put them in perspective. CME© feeder cattle futures contracts are cash settled at the CME© feeder cattle index, which is a 7-day weighted average of actual feeder cattle sales in a 12 state region of the US. That index currently sits at just under $136. So, the current feeder cattle futures market is expecting feeder cattle prices to improve by more than $10 per cwt between now and August and by more than $13 per cwt between now and October. I think it is important to think about the markets in this light since both these contracts have traded above $160 during their lifetime. There is a natural tendency for us to assume that markets that have come down that much shouldn't have much more downside. But, it is important to remember that, even to sustain these new lower futures price levels, cash feeder cattle trade must improve considerably as we move towards summer and fall.

Kentucky Auction Prices
500 to 600 lb Medium /Large Frame #1-2 Steers



Kentucky Auction Prices
700 to 800 lb Medium / Large Frame #1-2 Steers