

# *OFF THE HOOF*

*Kentucky Beef Newsletter May 2016*

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

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## **Timely Tips**

*Dr. Roy Burris, Beef Extension Professor, University of Kentucky*

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

- Improve or maintain body condition (BCS 5) of cows before breeding season starts, if necessary.
- Continue supplying a high magnesium mineral until daytime temperatures are consistently above 60 degrees F.
- 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.*
- Record identification of all cows and bulls in each breeding group.
- Consider breeding yearling replacement heifers one heat cycle (about 21 days) earlier than cows for “Head-start” calving. Mate to known calving-ease bulls.
- 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.
- 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.

### **Fall-Calving Herd**

- Pregnancy check the cow herd. Remove open cows at weaning time.
- 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.
- Calves may be weaned anytime now.

### **Stockers**

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

### **General**

- Seed warm season grasses this month.
- 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!
- Rotate pastures as needed to keep them vegetative.
- Clip pastures to prevent seedhead formation on fescue and to control weeds.
- Watch for black vultures around cows that are calving. You can obtain a permit to “take” three. After you “take” one of those sorry things, leave it lying in the pasture as a deterrent to others. Joe Cain shared some pictures that he made on a recent trip through western Kentucky which gives you some idea of the problem.



## **The Day Charlie's Mule Died**

*Dr. Roy Burris, Beef Extension Professor, University of Kentucky*

Horses and mules have always been special to farm families. Maybe because of their intelligence but probably due to the fact that we may have them for as much as thirty years. You can sure get attached to an animal in that length of time. That reminds me of Charlie's mule and my experience with horses.

Charlie worked on our farm when I was a kid. He had a matched pair of gray mules that were probably his most valued possession. Charlie "tended" some hill sides and "broke" the garden spots – places where mules were needed. One day he decided to leave his mules overnight, so he put the mules in the stable and left them. One of the mules died that night and I was so sorry for Charlie but I was also curious to see how he would react to the news. What do you say when your prized animal of many years dies? I couldn't wait to find out.

Charlie acted rather strange. I was expecting him to say something remarkable about how great a mule it had

been or something to that effect. But he was quiet ... just cleared his throat and went ahead doing what had to be done. I always wondered what he was thinking but I never had any idea until recently.

I've never been around mules much but I have had a few horses. They were all different and each were special in their own way. There was "Pokey" who was anything but. Pokey was a big blaze-faced sorrel with 4 white socks and an attitude. He was a "proud-cut" gelding that would just "snap" occasionally and run away with you. Our relationship didn't last long.

And then there was my nice looking sorrel mare with a blaze face and 3 stockings. She was aptly named "Show-Me". You just had to get her attention for the first couple of hours when you rode her. She was a pretty good horse but her attitude was show me.

In 1996 when I needed a horse for working cattle at the Princeton station, I knew that I should check with someone that knew more about cow horses than I did – so I called Larry Clay (a former president of the Kentucky Cattleman's Association and a man that I trusted). Larry brought Tonto for me to try out. Tonto was a good working horse about 12 years old and well-broke. I liked him on the spot. Tonto had one little quirk, he didn't like to get his feet wet. We would come to a ditch he wanted to jump it. I immediately thought it would be better if he did it my way. But, after some trying, I decided to give him that little oddity since it bothered him more than it did me – just let him jump, at least I now knew what to expect. I think that we bonded after that. He could be contrary with other folks but we got along just fine.

Tonto eventually got too old to ride. I kept him around anyway hoping no one would notice. He seemed to appreciate his "emeritus" status. I recall the time that I went into the bull pasture to make some notes on the young bulls and he came up and laid his head on my shoulder – as if to see what I was writing. As he began to lose condition, I got his teeth floated. No problem, I just scratched his head and he stood perfectly still as if he knew that would help.

All good things must come to an end and this past winter Tonto's time was winding down. He was about 32 years old now and was looking so bad that I knew that I would probably have to do the "humane thing" before long. Not a pleasant thought for me.

My Grandson, Ethan, and I took Tonto to the barn so that he could be out of the weather and have a constant supply of hay, feed and water. Ethan fussed over him, cut some cockleburs out of his mane and brushed him. The old horse seemed to perk up.

A couple of weeks later, I awoke early one Saturday morning with an ominous feeling that something was wrong with Tonto. I told Karen and she got an apple and some carrots. We went to check on our old friend. When we got there, it appeared that he had just died without struggling. Karen looked at me much as I had looked at Charlie years ago. But I didn't feel like saying anything. I gently raised his now gray head with its sunken eyes and removed his halter, symbolically letting him go.

I don't know what Charlie thought the day his mule died but I just silently let these words run through my mind: "Lord, I don't know what heaven is like and I don't know when I'll get there. But, if you have a little spread up there with some cows on it, maybe some warm spring morning Tonto and I could push them out to fresh pasture. That would be nice. Amen." Who knows, maybe Charlie is somewhere with his team of gray mules pulling that old rubber-tired wagon down a gravel road.

## **Wrap it Up and Improve Your Forage**

*Dr. Jeff Lehmkuhler, Extension Beef Specialist and Dr. Ray Smith, Extension Forage Specialist, University of Kentucky*

One should not complain about spring rains, but when it begins to interfere with hay making, the gloves are thrown off and it is go time. This seems to be the case every spring in the Bluegrass state. The spring rains helps the cool-season forages grow, but it impedes our field work. Since we can't control the weather or the forage from maturing, we have to dig deeper into the toolbox to find some help. Harvesting high moisture forage as baleage may be the tool of choice for some. Several folks have called about wrapping annual cereal grain forage this spring. Let's talk a few minutes to cover some basics so any forage made as baleage this summer has the best chance of resulting in a high quality winter feed.

- 1.) Forages need to be cut at the boot to early flower stage for optimum quality. This helps ensure adequate soluble carbohydrates for the microbes to ferment and drop the pH to preserve the forage.
- 2.) Forage should be baled at the proper moisture, 40-60%, to ensure a successful fermentation. Higher levels of moisture increases the risk of a clostridial fermentation and botulinum growth. Too dry impedes fermentation and again to lead to a poorly preserved forage. Obtain a windrow moisture meter, bale moisture probe or utilize the microwave technique for determining moisture levels in forage.
- 3.) Slow down the tractor speed when baling to ensure a tightly wrapped bale is made, particularly with cereal grain forages. It is important to limit the amount of air or oxygen so that anaerobic fermentation occurs soon after baling.
- 4.) Wrap bales in plastic ideally within 6 hours of baling to limit air and oxygen exposure. Stretch film should be applied to provide 6 millimeters of plastic thickness. This is often accomplished by having 6 layers of plastic. At a minimum 4 layers of plastic should be applied, but 6 millimeters is recommended to limit oxygen from getting through the plastic.
- 5.) Allow the bales to ferment for 4-6 weeks. Samples should be obtained and analyzed for pH and ideally a fermentation profile which will provide the level of acids in the silage. This information is important to help determine the quality of silage made and whether there is a potential risk for a disorder.

There are thousands of bales made for silage annually with few cases of botulism or listeria occurring in animals. The key to lowering the risk of poor fermentation is following the five basic steps outlined above. For additional information on making baleage, please contact your local county Extension office.

## ***Microwave Oven Method to Determine Moisture Content of Hay, Silage and Baleage***

The microwave oven method provides reasonably accurate forage moisture results in a relatively short time. Although this method takes about 20 minutes to complete, the measured moisture concentration is much more accurate than those from electronic conductance moisture testers, especially for high moisture sample like silage and baleage.

Before using the microwave oven method, obtain the following items:

- Microwave oven
- Scale (must weigh in grams-can buy one from most post offices)
- Microwave-safe plate
- 10- to 12-ounce cup of water (a coffee mug works best)
- Pencil and paper

Use the following procedure for the best results:

1. Obtain a representative forage sample (whole plant material).
2. Cut the sample into 1-inch pieces; keep leaves and stems uniformly mixed.
3. Weigh the plate and record it as "plate weight." This will be subtracted during the final calculation.
4. Add approximately 100 grams of the forage sample to the plate; spread the sample as uniformly as possible.
5. Weigh the plate with the forage sample and record it as "initial weight."
6. Place the cup of water in the corner of the oven to capture unabsorbed microwaves as the plant tissue dries. This prevents sample from igniting.
7. Place the sample on the plate in the center of the oven.
8. Set the oven on HIGH for 2 minutes\* and "cook" the sample.
9. Remove the sample and plate, weigh them, and record the weight.
10. Change the water in the cup to prevent the water from boiling over.
11. Set the oven on HIGH for 1-2 minutes\* and "recook" the sample.
12. Remove the sample and plate, weigh them, and record the weight.
13. Repeat steps 7 through 10 until the weight does not change more than 1 gram (this means the sample is dry); record as "final weight."
14. Use the following equation to determine the percent of moisture of the forage sample:

Percent moisture (%) =

$$\frac{(\text{Initial weight} - \text{Final weight}) \times 100}{\text{Initial weight} - \text{Plate weight}}$$

## **Pinkeye in Cattle**

***Michelle Arnold, DVM (UK Ruminant Veterinarian)***

Infectious Bovine Keratoconjunctivitis (IBK) or "Pinkeye" is a costly disease for the beef producer. Preventing the disease is difficult because many factors are involved in the development of pinkeye including environment, season of the year, concurrent diseases, the strain of bacteria involved, and the animal's genetic makeup and immune system. Once pinkeye begins, it is highly contagious and can spread rapidly within the herd. Careful attention to control of contributing factors and prompt, effective treatment in the face of an outbreak are necessary to reduce the spread and limit the damaging effects of the disease.

The cause of pinkeye is the bacteria *Moraxella bovis* (*M. bovis*) which is located in the eyes and nasal cavities of infected cattle. A newly isolated strain of bacteria “*Moraxella bovoculi*” may play an important role as well but research has yet to confirm this. *M. bovis* has two known factors that are important for causing pinkeye: pili and cytotoxin. “Pili” are hairlike projections that enable *M. bovis* to stick to a damaged or injured surface of the eyeball (on the cornea). There are 7 different serogroups of pili (A through G). “Cytotoxin” gives the bacteria the ability to kill corneal epithelial cells leading to an ulcer. It is also believed to be responsible for killing white blood cells needed to fight infection in the eye. The rupture of these white blood cells releases enzymes that further break down the cornea, making the ulcer even worse. Cattle are the only known reservoir of *Moraxella bovis* and infected carrier animals may harbor this organism year round without showing any signs of eye problems. Once pinkeye begins in a herd, it is highly contagious and can spread rapidly by direct contact through nasal and ocular discharges and by vectors such as flies.

Prevention of pinkeye is difficult because it is a complicated, multifaceted disease. The best plan is to reduce or remove as many risk factors as possible that can result in damage to the cornea which allows the bacteria to take hold of the corneal surface. Many different combinations of contributing factors such as ultraviolet rays from the sun, face flies, excessive eye irritation, and stress may work together within a herd at one time. Prevention is based on maximizing herd immune status, minimizing exposure to the bacteria, and maintaining as irritant-free environment as possible.

#### Steps to Preventing Pinkeye:

1. Maximize Herd Immune Status- An overall good level of nutrition, adequate vitamin and trace mineral intake, a comprehensive vaccination program including the respiratory viral diseases IBR and BVD, parasite control, and basic biosecurity practices are all exceptionally important in improving the cow's or calf's ability to fight off any disease process (not just pinkeye). There is no scientific evidence to support feeding excessive levels of any vitamin or mineral, including Vitamin A, will prevent diseases of the eye. Biosecurity measures such as quarantine of new arrivals to the farm (including show animals) for three weeks before commingling with the herd are important in case any of these animals is carrying the disease.
2. Maintain an irritant free environment- Any irritation to the eye allows *Moraxella bovis* to invade and cause pinkeye. Prevent eye irritation with good face fly control, mow tall grass with seed heads, provide shade and clean water, and reduce sources of stress (such as overcrowding) if possible. Control face flies with ear tags impregnated with insecticide and topically administered insecticides by way of back and face rubbers or dust bags they must walk under to get to water or mineral (see UK Extension Publication ENT-11: Insect Control on Beef Cattle). Removal of fly breeding grounds and the use of certain feed additives will decrease the number of flies. Provide shade to protect from the harmful UV rays of the sun. Cool, clean drinking water (instead of stagnant pond water) is critical because intake is greater with clean water and this helps provide plenty of fluid in the eye, especially important in dry, dusty, and/or windy conditions. Tears are essential in eye defense mechanisms as tears wash away pathogens and tear proteins are an important part of protective mechanisms. Do not forget to regularly check and clean automatic waterers.
3. Minimize exposure to *M. bovis* [and *M. bovoculi*]- Early detection of animals with the first clinical signs (tearing, squinting, and blinking) and then prompt, effective treatment are essential to reducing spread to herd mates and limiting damage to the eye. Long-acting antibiotics such as long-acting tetracycline or the prescription antibiotic tulathromycin (Draxxin®) are labeled for treatment of pinkeye. Your veterinarian may prescribe the antibiotics florfenicol (Nuflor®) or ceftiofur (Excede®) to be used in an off-label manner for treatment as well. Injectable antibiotics are generally the best option because of their long duration of activity and effectiveness in eliminating bacteria. Topical sprays only remain in the eye a few minutes before tears wash them away so



application is generally required 3-4 times daily to be effective. When severe ulceration exists, the eyeball may need extra protection with either a patch or the eyelids may need to be sutured (stitched) together. Remember, preventing spread by treating affected animals is the single most important factor in controlling a disease outbreak. Active cases of pinkeye with excessive tearing attract flies that widely spread the bacteria. Topical application of a fly repellent to the face will also help reduce spread.

4. Does vaccination work? Immune responses to pili have been shown to be protective in some studies where animals are vaccinated with pili of a certain type and then challenged with a similar strain. This fact is likely responsible for why some herds might see a benefit from vaccination while other herds do not; if the vaccine strain stimulates immunity to a pilus type that is also present in the herd, there should be good protection. In clinical trials, approximately half reported significant protection from commercial vaccines. Therefore, it is unlikely that vaccination is the solution to all pinkeye problems although it may reduce the overall incidence of disease and severity of clinical signs. When commercial vaccines are not effective, a vaccine can be made from bacteria cultured from pinkeye cases from one particular farm or farms in a certain area. All cultures must be taken early in the course of disease; preferably when the eye is just beginning to tear excessively and before any medications are used. These specialty vaccines can be effective if the “correct” *M. bovis* antigen is used. However, autogenous vaccines often lose effectiveness within one to two years as the bacteria mutates and a new batch needs to be made from new cultures.

In summary, pinkeye is one of the most common diseases of cattle and is of major economic importance in Kentucky. The keys to prevention and control of an outbreak are maximizing the herd’s immune status, minimizing exposure to *Moraxella* bacteria, and maintaining as irritant-free environment as possible. Treatment decisions are influenced by numerous factors such as effectiveness of the drug, cost, labor availability, withholding times, facilities, and availability of a veterinary prescription. Vaccines are not consistently effective in disease prevention and cannot be completely relied upon to prevent pinkeye. The best strategy of treatment, prevention and control of pinkeye for a particular herd is best accomplished with the help of the local veterinarian.

## **Feedback Needed on Cattle Health and Safety Concerns**

*Michelle Arnold, DVM (UK Ruminant Veterinarian)*

The Southeast Center for Agricultural Health and Injury Prevention (SCAHIP) would like to collect some feedback from stakeholders, including owners, workers and their families, academic researchers, cooperative extension personnel, veterinarians, state or federal government employees, and all those who work in areas that come into contact with agricultural industries.

Below is a short survey to find out what you consider to be the top health and safety concerns agricultural workers and their families encounter in the 10 state (KY, TN, GA, AL, MS, NC, SC, VA, WV, FL) Southeast Center’s region. This survey is 100% anonymous so please be direct and honest with your responses. Please forward the link to others who may be interested. Once submitted, you may enter to win a Visa Gift card.

You may open the survey in your web browser by clicking the link below:

[Southeast Center Interest Survey Spring 2016](#)

If the link above does not work, try copying the link below into your web browser:

<https://redcap.uky.edu/redcap/surveys/?s=K47E7NLNAW>

For Spanish Version (En Español):

You may open the survey in your web browser by clicking the link below:



If the link above does not work, try copying the link below into your web browser:  
<https://redcap.uky.edu/redcap/surveys/?s=ADNYCT4JWT>

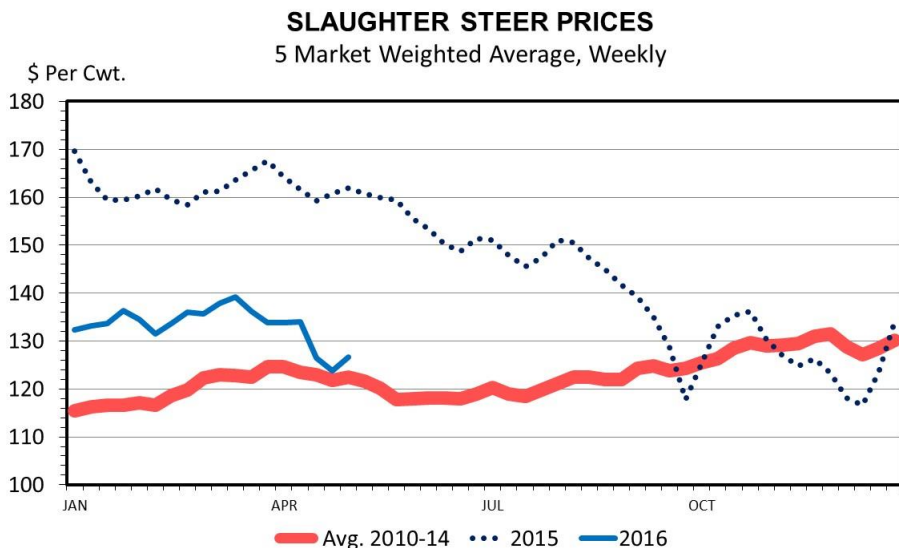
## Kentucky Beef Cattle Market Update

*Kenny Burdine, Livestock Marketing Specialist, University of Kentucky*

This was one of the more frustrating spring markets I remember. After seeing calf prices reach record levels in the spring of 2014 and take those records out in the spring of 2015, a reversion back to 2013 calf price levels was not what most were hoping for. Admittedly, I was expecting stronger prices when I made forecasts last winter. For the most part, I think the same factors that pulled the market down in the second half of 2015, also explain the weakness the spring. While the beef trade picture has improved somewhat, it is not where many had hoped it would be given the production increases we are likely to see. Pork and poultry are both likely to show another production increase in 2016 and those forecasts have been raised since winter. And although slaughter weights have decreased from their fall 2015 highs, they do remain high from a historical perspective.

As I write this (5-12-16), the market is enjoying its second straight week of improvement. After trading at levels around \$140 per cwt, August feeder cattle futures have pushed into the upper \$140's and tested the \$150 level. For the first week of May, 550 lb steer calves were moving at around \$155 per cwt on a state average basis, with some larger groups well into the \$160's. At the same time, 850 lb steers were trading in the mid-\$130's for the most part. The recent improvement in feeder cattle futures has set a slightly more optimistic tone in local markets.

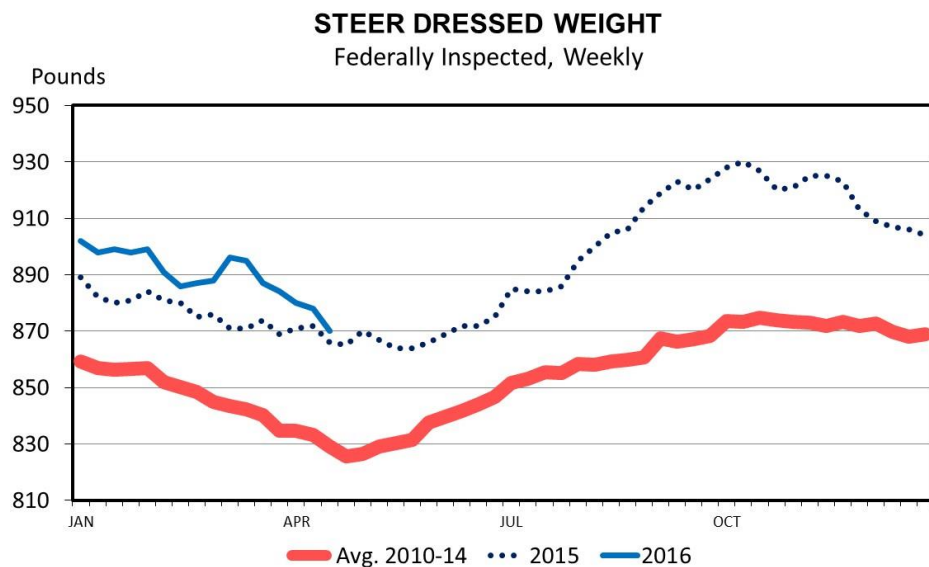
I really wanted to show about 20 different charts this month, but narrowed it down to two. The first chart below is the most recent 5 market weighted average fed cattle price. You'll notice that the fed cattle market seemed to drop sooner than normal this year. It usually puts in a bottom around June and moves up through fall. That would be encouraging if it happened this year since the market dropped from summer to fall in 2015 and simply didn't allow the feeder cattle market to pick up any momentum after spring.



Data Source: USDA-AMS  
Livestock Marketing Information Center

I also wanted to show the chart of dressed weights as I think this has been another major factor impacting our markets. You can easily see the extremely high levels from fall 2015 and can also see that weights have dropped significantly from then. However, you'll also notice that weights typically do decrease from fall to spring and we are at about the usual seasonal low as I write this. So, it's probably a bit early to say that this issue is safely in our rear-view mirror. It will be very interesting to watch slaughter weights for the remainder of 2016 for a handful of reasons, most of which are related to feed prices and cattle on feed numbers. Clearly, the price of feed, in relation to what fed cattle prices do, will determine how hard feedlots push feedyard cattle.

While I try not to read a great deal into a single month's cattle on feed report, it is worth noting that the April report finally showed a sizeable drop in the number of cattle that had been on feed over 120 days. It was also the second straight month that we saw a drop in the number of cattle that had been on feed over 90 days. This is certainly a sign that we may be working through some of those very heavy cattle and is consistent with the drop in slaughter weights we have been seeing. The second trend that likely needs to be pointed out is the increase in the number of cattle that are being placed weighing more than 700 lbs. Heavy placed cattle tend to finish heavier, which may have implications for the second half of 2016. But, at the same time, I feel that this is primarily due to the fact that feeder cattle inventory outside of feedyards had been growing for a while, so it is somewhat encouraging that we are seeing some of those cattle placed. We either deal with them now or later, and if we deal with them later, they will only have great impact when they hit the market.



Data Source: USDA-AMS and USDA-NASS  
Livestock Marketing Information Center