

OFF THE HOOF

Kentucky Beef Newsletter August 2016

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

- Fescue pastures don't generally produce much this month, however rain in July has given us some forage going into the usually dry months. Keep rotating pastures to permit calves to continue gaining weight. Keep minerals available at all times.
- Repair and improve corrals for fall working and weaning. Consider having an area to wean calves and retain ownership for postweaning feeding rather than selling "green", lightweight calves. Plan to participate in CPH-45 feeder calf sales in your area.
- Bulls should have been removed from the cow herd by now! They should be pastured away from the cow herd with a good fence and allowed to regain lost weight and condition. It is a good time to evaluate physical condition, especially feet and legs. Bulls can be given medical attention and still have plenty of time to recover, e.g., corns, abscesses, split hooves, etc. Don't keep trying to get open spring cows bred - move them to fall calving or sell them when they wean this year's calf.

Fall-Calving Cow Herd

- Prepare for the fall-calving season (usually September). Get ready, be sure you have the following:
 - record book
 - eartags for identification
 - iodine solution for newborn calf's navel
 - calf puller
 - castration equipment
- Dry cows should be moved to better pastures as calving time approaches. Cows should start calving next month. Yearling heifers may begin "headstart" calving later this month. Plan to move cows to stockpiled fescue for the breeding season, so it will soon be time to apply nitrogen fertilizer.

General

- Avoid working cattle when temperatures are extremely high – especially those grazing high-endophyte fescue. If cattle must be handled, do so in the early morning.
- Do not give up on fly control in late summer, especially if fly numbers are greater than about 50 flies per animal. You can use a different “type” of spray or pour-on to kill any resistant flies at the end of fly season.
- Provide shade and water! Cattle will need shade during the hot part of the day. Check water supply frequently – as much as 20 gallons may be required by high producing cows in very hot weather.
- Keep a good mineral mix available at all times. The UK Beef IRM Basic Cow-Calf mineral is a good choice.
- Cattle may also be more prone to eat poisonous plants during periods of extreme temperature stress. They will stay in “wooded” areas and browse on plants that they would not normally consume. Consider putting a roll of hay in these areas and/or spraying plants like purple (perilla) mint which can be toxic.
- Take soil samples to determine pasture fertility needs. Fertilize as needed, this fall.
- Select pastures for stockpiling. Remove cattle and apply nitrogen when moisture conditions are favorable. Stockpiled fescues can be especially beneficial for fall-calving cows after calving.

Beef Bash 2016

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

The 5th biennial Beef Bash will be held again at the University of Kentucky Research and Education Center in Princeton on September 22. This event which is co-hosted by UK and the Kentucky Cattlemen’s Association, combines social, educational and industry interaction and should have something for everyone that is interested in beef can the Kentucky beef industry. The staging area will be under the big tent out in a pasture on the back side of the farm again this year. There will be lots of live cattle demonstrations, research presentations, commercial and educational exhibits. You will have opportunities to take various tours that will be available or you can simply sit on a bale of straw and visit with university or industry leaders, commercial representatives or your fellow cattle producers.

The leadership of the Kentucky Cattlemen’s Association will be present and KCA’s executive board will meet that morning at the UKREC building, the Kentucky Beef Council will also be participating in educational events. We will have keynote speakers for the noon program which will include Dr. Nancy Cox, Dean of the College of Agriculture, Food and Environment, Mr. Warren Beeler, head of the Governor’s Office of Agricultural Policy (GOAP) and Mr. Dave Maples of the Kentucky Cattlemen’s Association. Lunch will be available and will include beef grilled by the Caldwell-Lyon Cattlemen’s Association.

Most of the UK beef, forage specialists and researchers, along with specialists from other disciplines, will be there to participate in the program and to visit with you. We will be updating information from time to time but here is a general description of what you can see and do:

Cattle. You can see a “no-frills” cattle operation which provides animals to support the beef research program. We keep 180 cows and September 22 will be just after the first round of fall calving. Commercial cows are of Angus breeding with some Brangus-influence. We maintain some registered Angus and Brangus animals to provide our own herd bulls. All animals are raised on the farm under a strict herd health program. The cows have one round of timed-AI utilizing CIDR’s and then clean-up bulls are used for a short time. We’ll have several cattle exhibits to illustrate various management practices. Dr. Les Anderson will lead you on a tour of the cattle exhibit. “Pasture to Plate” cattle will be ready to harvest and will be part of a discussion led by Dr. Darrh Bullock.

Commercial exhibits. A large tent in the staging area will house about 30 commercial exhibits and serve as the focal point of all activities. You can visit with various company representatives as you please and make plans for purchasing products for weaning calves or wintering the cow herd. Information on many new products will be available. Take your time and visit a while. These folks contribute the funds that allow us to pay the expenses for this event which include renting buses and tents and giving a pair of gloves to everyone that registers.

Hands-on Demonstrations. Various “how-to” demonstrations will be conducted throughout the day. You can attend those that interest you and ask questions in a less formal environment. We hope to demonstrate new technologies – like drones, etc.

Social: Visit with the leadership of the Kentucky Cattlemen’s Association and the University of Kentucky. The Dean and Associate Deans of the UK College of Agriculture are planning to attend and look forward to visiting with you. Bring any prospective agriculture students, especially those interested in Animal and Food Sciences with you. The beef Extension specialists and researchers will, of course, be available to visit and answer questions. KCA will be represented with leaders from across the state. Come and visit with other cattlemen from across the state and be a part of making KCA the voice for all Kentucky cattle producers.

Research Results. Participants will learn about research which is being conducted to improve the beef herds of Kentucky and beyond. Cutting-edge research has been conducted in the area of mineral supplementation of cattle – especially selenium. Other research has been conducted to extend the productive life of cows and to alleviate the effects of fescue toxicosis.

Heifers which are produced at the station are trained to Calan® (electronic) individual feeding gates and are used in supplementation trials. The goal is to have an entire beef herd trained to the gates so research can be conducted on various supplements to mature cows in the same pasture. We have finished a three-year trial on mineral intake and trace mineral nutrition and have started new trials. Researchers, especially Drs. Matthews and Bridges will report on these trials.



Added Tour: Since you will be nearby, we will offer a guided tour of Black Hawk Farms (home of Black Hawk Beef). This operation has two state-of-the-art composting barns which changes the way we think about manure handling. See www.blackhawkmeats.com for more information.

We hope to see you at Princeton. You are important to us and the beef industry. Make plans now to spend some time with folks who are interested in the same things that you are – improving our position in the beef industry. Mark September 22 on your calendar and bring a neighbor. Consider this my personal invitation to help make this the biggest “bash” ever.

Upcoming Events

Ben Crites, IRM Coordinator, University of Kentucky

The University of Kentucky and Kentucky Beef Network have multiple upcoming programs in the coming months. An exciting new weaning workshop is planned for September 14th at the Eden Shale farm, Beef Bash is taking Place on September 22nd in Princeton, and the Pasture to Plate program is wrapping up its final live animal evaluations, carcass evaluations, including a summary banquet at each of its three locations.

Weaning 101 Workshop: As we begin to transition into late summer and early fall, we start thinking about getting ready to wean spring born calves. The weaning phase can sometimes be stressful on both producers and cattle alike; but does it have to be? To better prepare producers for the upcoming weaning phase, beef specialists at the University of Kentucky have teamed up with KBN to develop a workshop to demonstrate the basics of on-farm weaning. With a drop in the feeder cattle market, one way that producers can add value to their calves is through applying management. Castrating male calves, vaccinating, and on-farm weaning are all ways that producers can add value to feeder calves. This workshop will combine classroom instruction with hands-on learning experiences related to the process of weaning beef calves. Throughout the day, speakers will share information on vaccination protocols, nutrition, environmental management, Veterinary Feed Directive, feeder cattle grading, and economics of weaning calves on the farm.

The workshop is scheduled for Wednesday, September 14th, 2016 at the Eden Shale farm in Owenton, KY. The program will begin with registration at 8:30 a.m. and lunch will be provided. Participants will also be invited to the Eden Shale Field Day on October 15th as a follow up to the workshop. During the October field day, participants will learn how the calves performed during the weaning period. There is no charge to participate; however, the program is limited to the first 30 people. Please call the KCA office at (859)-278-0899 to reserve your spot!

Beef Bash: The University of Kentucky and Kentucky Cattlemen’s Association are proud to host the 5th biennial event, Beef Bash, this year on September 22nd at the University of Kentucky Research and Education Center in Princeton, KY. This event is one of the larger field days offered to Kentucky beef producers. Participants have the opportunity to hear from a variety of extension specialists, researchers, and industry experts. There are also a large number of commercial vendors on display representing a variety of different products and services. With historical attendance between 400-500 participants, there is a large amount of networking taking place. This year, the highlighted noon time speakers will include Dr. Nancy Cox, Dean of the College of Agriculture, Food, and Environment, Mr. Dave Maples, Executive Vice President of the Kentucky Cattlemen’s Association, and Mr. Warren Beeler, Executive Director of the Governor’s Office of Agriculture Policy.

The demonstrations and educational exhibits this year will cover a variety of different topics. Some of the topics to be covered include: mineral and reproduction interactions, breeding programs, coproduct feedstuffs, finishing cattle, environmental management techniques, forages, using drones in agriculture production, and controlling wildlife problems. Registration begins at 8:30 a.m. CDT, and programs and tours start at 9 a.m. CDT. A lunchtime meal will be made available to purchase. No preregistration is required. Participants will receive a free pair of cotton-knit gloves and be entered in a drawing for a YETI cooler.

For more information, please contact Roy Burris at (270)-365-7541, ext. 208 (roy.burris@uky.edu), Blair Knight at (270)-365-7541, ext. 297 (blair.knight@uky.edu) or Ben Crites at (859)-257-7512 (benjamin.crites@uky.edu).

Pasture to Plate: The Pasture to Plate program is reaching the final sessions for each of the three locations. Ten head of cattle have been on feed at each location; UKREC in Princeton, the Morgan County Extension farm, and the Eden Shale farm. The cattle were received in late March and early April and have been followed through the entire finishing period. Producers have had the opportunity to learn more about feeder cattle grading, processing feeder calves, environmental issues, nutrition, and health concerns associated with the process of finishing cattle. A final live animal evaluation, carcass evaluation, and summary banquet will be held at each location.

At the final live animal evaluation session, participants will learn about assessing finished cattle and estimating the carcass characteristics of each animal. During the carcass evaluation session, participants have the opportunity to go in the cooler to evaluate the different carcasses for fat thickness, quality and yield grade, and ribeye area. Following the carcass evaluation participants will sample steaks from each animal in a sensory panel to evaluate it for tenderness, juiciness, flavor, and overall acceptability. A summary banquet will wrap up the program; the Kentucky Beef Council will provide information on the nutritional benefits that beef provides to be followed by an in-depth discussion of the performance of each animal in the program. Participants will get to enjoy a ribeye dinner during the banquet from one of the selected animals prepared by the local cattlemen associations. It is not required that you have attended any of the previous sessions to participate in these sessions. However, you must attend the final live animal evaluation in order to participate in the carcass evaluation and summary banquet.

SESSION DATES AND LOCATIONS

Morgan County

- 9/6/16— Live Animal Evaluation, Lee City Stockyards, 5:30 pm
- 9/13/16— Carcass Evaluation and Sensory Panel, The Chop Shop, 2:00 pm
- 9/13/16— Summary Banquet, Morgan County Extension Office, 6:30 pm

Princeton

- 9/29/16— Live Animal Evaluation, UKREC, 5:30 pm CDT
- 10/6/16— Carcass Evaluation and Sensory Panel, Hampton Meats, 2:00 pm CDT
- 10/6/16— Summary Banquet, Christian County Extension Office, 6:30 pm CDT

Eden Shale

- 10/4/16— Live Animal Evaluation, Eden Shale Farm, 5:30 pm
- 10/12/16— Carcass Evaluation and Sensory Panel, UK Meats Lab, 2:00 pm
- 10/12/16— Summary Banquet, Fayette County Extension Office, 6:30 pm

For more information, please contact Ben Crites at (859)-257-7512 or benjamin.crites@uky.edu or by calling the Kentucky Cattlemen's Association at (859)-278-0899.

Could My Cow Have Cancer?

Michelle Arnold, DVM (Ruminant Extension Veterinarian, UKVDL) and JD Green, PhD (Extension Professor, Weed Scientist), UK Plant and Soil Sciences Department)

Malignant Lymphosarcoma is the most common neoplastic (cancerous) disease identified in cattle slaughtered in the United States and largest single reason cattle are condemned during postmortem

inspection. A 2009 report sites malignant lymphosarcoma for 13.5% of beef cattle condemnations and 26.9% of dairy carcass condemnations. The bovine leukemia virus (BLV) initiates the cancer and this virus routinely spreads through contact with blood from an infected animal. BLV can spread through procedures such as injections with used needles, surgical castration and/or dehorning, tattooing, rectal palpation with dirty sleeves, as well as through insect vectors such as horseflies. Calves may also be exposed during pregnancy or while nursing an infected dam. Less than 2% of BLV-infected animals will go on to develop lymphosarcoma, a cancer affecting lymph nodes, multiple organs and white blood cells. Tumors may occur in the spinal canal, uterus, heart, abomasum, kidney and/or lymph nodes. The most common clinical signs include anorexia, weight loss and fever. Bovine leukosis is not transmissible to humans.



Multiple, firm white tumors may be present in any organ on post-mortem examination. This tumor is lymphosarcoma in the abomasum. Photo courtesy of the UKVDL.

Although cancer in cattle is not treatable, the risk can be substantially decreased with proper management procedures. Bovine leukemia virus (BLV) is a common viral infection in US cattle, with 39% of beef cow-calf herds and 83% of dairy herds containing BLV-infected cattle. In contrast, many European countries have successfully eradicated BLV from their herds. BLV-infected animals become permanent carriers. This retrovirus causes the cattle disease known to veterinarians as “Enzootic Bovine Leukosis” or EBL. EBL has 3 disease stages: asymptomatic, persistent lymphocytosis (PL), and finally the cancerous stage (leukemia or lymphoma). Cattle and sheep are thought to be the only species naturally susceptible, and prevalence rates are higher in dairy breeds than beef. The majority of infected animals are over 2 years old, with younger animals

developing “sporadic bovine leukosis”. Sporadic forms (juvenile, thymic and cutaneous) are unrelated to the bovine leukemia virus.

Persistent lymphocytosis is defined by an increase in total lymphocyte count three times above normal, and persisting for at least three months but with no clinical signs of neoplastic (cancerous) lesions. PL is thought to occur in approximately 1/3 of all BLV-infected cattle. Recent research suggests BLV infection causes abnormal immune function however little is known regarding its specific effect on immunity and resistance to other infectious diseases. It definitely impairs milk production and cow longevity as infected cattle are often culled or die at an early age.

The final stage of Enzootic Bovine Leukosis is cancer, usually malignant lymphosarcoma. Only a small fraction of BLV-infected cattle, approximately 1-2 %, develop lymphosarcoma after an average incubation period of 7 years after infection with the virus. The sites most commonly affected by tumors are the heart, abomasum (true stomach), uterus, kidney, spinal cord, and the area behind the eyeball. Early signs include loss of appetite, weight loss, decreased milk production, fever, and enlarged lymph nodes. Some infected cattle will show no sign of the disease as approximately 5-20% of cases present as sudden death. Other clinical signs of disease are linked to the organ system affected by tumor metastasis and can include:

- Tumors in many parts of the body, which can appear as lumps under the skin. The most common presentation is that of **enlarged lymph nodes** which look like fist-size swellings in front of the shoulder, in the flank and other locations. This is often the earliest indicator of disease.
- Tumors in the heart can cause cardiovascular dysrhythmias, jugular vein distension, rapid heart rate or murmurs.
- Abomasal (stomach) tumors cause gastrointestinal problems digesting feed resulting in loss of appetite and weight, constipation or diarrhea, abomasal tympany or bloat, and hypomotility.

- Retrobulbar tumors can cause bulging eyes, blindness and other ocular signs.
- Spinal tumors may cause rear limb weakness or paralysis. Neurological signs and lameness also sometimes occur due to local tumor growth.

How is BLV spread? Transmission of bovine leukemia virus is mainly horizontal from cow to



Lymphosarcoma in the kidney-Photo courtesy of the UKVDL

cow. Routine cattle working procedures are an important route as they transfer **contaminated blood** between individuals on surgical equipment, needles and gloves. Rectal palpation without changing sleeves, the re-use of a single needle on multiple cows, dehorning, tattooing, and ear tagging without proper sanitation between animals are all implicated in virus transmission. Biting flies and other blood-feeding insects are also proven modes of transmission. Direct transmission between animals in close contact occurs when virus-infected blood, fluids or tissues enter through small cuts in the skin. This includes using bulls for breeding because there is occasionally blood exchange due to

minor penile or vaginal trauma. Vertical transmission from cows to baby calves during pregnancy or when nursing is less common but the virus can pass via the placenta, during delivery and in colostrum.

How is BLV diagnosed? Blood testing is the first step to identify BLV-positive (infected) animals. An inexpensive (\$4) serum ELISA test is available at the UK Veterinary Diagnostic Laboratory to detect antibodies to the virus. Once an animal is infected and tests positive, she will remain test positive for her lifetime. Testing can be done in animals over six months of age. Lymphosarcoma (the actual cancer) is best diagnosed through a lymph node biopsy.

What should a producer do with a BLV + animal? The decision on what to do with a positive animal is best determined through consultation with the herd veterinarian, based on the specific goals of the individual farm. Implementation of a BLV control program depends largely on a comparison of the cost of the disease and the cost of preventing disease. Economic losses stem from the inability to sell cattle for export or as bull studs, condemnation of carcass at slaughter if tumors are present, and clinical disease/death loss. Recent research has shown lost milk production realized in lower weaning weights, higher culling rates, and immune system dysfunction also need to be considered. Seed stock producers and especially those who export internationally are more likely to aggressively pursue BLV-free herd status. Disease control is based on strict biosecurity that eliminates contact with infected blood, the most important measure for preventing the spread of BLV in cattle herds. Segregating or culling positive cattle, adding only BLV-negative cattle to the herd, making management changes to reduce transmission such as single-use needles/sleeves and disinfecting equipment between animals, and implementing an integrated pest management program will substantially reduce the risk of this and all other blood-borne diseases.

<p>One Disease but with Many Names: Enzootic Bovine Leukosis — Bovine Leukosis — EBL — BLV — BoLV — Bovine Leukemia — Lymphosarcoma — Sporadic Bovine Leukosis — Bovine Malignant Lymphoma</p>

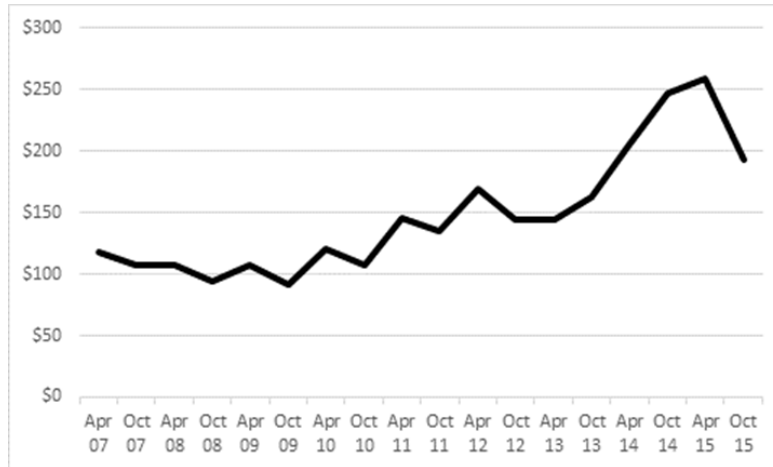
Cow-calf Profitability Expectations for Fall 2016

Kenny Burdine and Greg Halich, University of Kentucky Agricultural Economists

The drastic decline in calf prices from summer 2015 is having a major impact on cow-calf profits. In evaluating cow-calf profitability this year, it may prove useful to provide a long-run perspective on calf prices. The chart below shows historical April and October prices for a 550# steer in Kentucky from 2007 to 2015 (USDA-AMS). Part of our message to cow-calf operators as we traveled the state this winter / spring was that our current market is not that far from the long-run “normal”. Current prices are not bad from a historical perspective. What does look bad are these prices compared to what we have had in the last two

years. When you sold calves for \$2.00-\$2.50/lb just over a year ago, selling those same calves in the \$1.35-\$1.50/lb range is hard to swallow.

Figure 1: Kentucky Auction Prices – 550# Steers
Weighted average basis



Source: USDA-AMS, author calculations

The calf market that we enjoyed for much of 2014 and 2015 reached those unprecedented levels due to an extremely unique set of circumstances. A prolonged drought in the Southern Plains from 2011-2013 and the loss of significant pasture ground to row crop production extended the liquidation phase of the last cattle cycle. Had it not been for those two factors, herd expansion would have likely begun in 2011 or 2012, rather than 2014. The result was that we entered 2014 with a cow-herd about the same size as we had in the early 1960's. As we began to grow the cow-herd in 2014 and 2015 (through reduced cow slaughter and increased heifer retention), we were also seeing sizeable production increases in pork and poultry. These factors, combined with reductions in exports, left considerably more meat available per capita in the US. This placed a great deal of pressure on cattle prices, which were further depressed as slaughter weights rose due to cheaper feed last fall. Regardless of the causes, the result was as significant a drop in calf prices as we have ever seen on a year-over-year basis. For the first week of August 2016, 550 lb steer calves were selling around \$1.45 per lb on a state average basis according to the weekly Kentucky Livestock and Grain Market Report. The same week in 2015, those same steer calves were selling for \$2.44 per lb. This 41% price decline represents a difference of nearly \$550 per steer in twelve months and that \$550 decline was virtually all profit.

Given this drastic drop in prices, it seems fitting to take a look at expected profitability for cow-calf operations in the current market. Table 1 estimates fall 2016 returns to a traditional spring-calving cow-calf operation. Every operation is different, so producers should modify these estimates to fit their situation. Average weaning weight is assumed to be 550 lbs and the steer / heifer average calf price is assumed to be \$1.40 per pound, which is just an estimate for this fall. Weaning rate is assumed to be 90%. Using this weaning rate, we effectively convert revenues from a "per calf weaned" basis to a "per cow maintained" basis. It is worth noting that this is a relatively high weaning rate compared to the Kentucky average. Based on these assumptions, calf revenue per cow is \$693.

The pasture stocking rate is assumed to be 2 acres per cow-calf unit and pasture maintenance costs are assumed to be relatively small. At \$25 per acre, this would include one pasture clipping and seeding some legumes on a portion of the pastures acres each year. Producers who apply fertilizer to pasture ground would likely see much high pasture maintenance costs. Cows are assumed to consume 2.5 tons of hay through the winter and that hay is valued at \$75 per ton. In many cases hay can be purchased for less than this, but most operations produce their own hay and costs on many of these farms will be higher. Mineral cost is set at \$35

per cow, veterinary / medicine costs \$25, trucking costs \$10, machinery costs \$20 (primarily for feeding hay as this does not include machinery for hay production or pasture clipping as they are included in those respective costs), and other costs \$15.

Breeding costs are assumed to be \$40 per cow and are one of the most misunderstood costs on a cow calf operation. Breeding cost on a per cow basis should include annual depreciation of the bull and bull maintenance costs, spread across the number of cows he services. For example, if a bull is purchased for \$3,500 and is sold two years later for \$2,500, the bull depreciated \$500 each year. Then, if his maintenance costs were \$500 per year (feed, pasture, vet / med, etc.), his ownership costs are \$1,000 per year. If that bull covers 25 cows, breeding cost per cow is \$40. A similar approach can be used for AI, but producers should be careful to include multiple rounds of AI for some cows and the ownership costs of a cleanup bull, if one is used.

Marketing costs (commission) are currently assumed to be \$27 per cow. Larger operations may market cattle in larger groups and pay lower commission rates, but this assumes 2.5% of value, plus commission, checkoff, and insurance.

Finally, breeding stock depreciation is another key cost that is often overlooked. For example, if the “typical” cow was valued at \$1,800 when she entered the herd and a typical cull cow value was \$800, then she would depreciate \$1,000 over her productive lifetime. If we assume a typical cow has 8 productive years, then annual cow depreciation is \$125. This is the assumption made in this analysis, but the actual depreciation will vary across farms. When buying replacement bred heifers, this cost is obvious. With farm-raised replacements, this cost should be the revenue foregone if the heifer had been sold with the other calves, plus all expenses incurred (feed, breeding, pasture rent, etc.) to reach the same stage as a purchased bred heifer. While discussion of costs that are included is important, discussion of costs that are not included is just as crucial. Notice that no value is placed on the time spent working and managing the operation, no depreciation on facilities, equipment, fences, or other capital items is included, and no interest (opportunity cost) is charged on any capital investments including land, facilities, and the cattle themselves. So, the return needs to be thought of as a return to the operator’s time, equipment, facilities, land, and capital. Based on these assumptions, total expenses per cow are roughly \$535 and revenues per cow are \$693 for a return to land, labor, capital, and management of \$158 per cow.

Table 1: Estimated Returns to Cow-calf Operation: Fall 2016				
Revenues				
Steer / Heifer Calf Average	550	lbs	\$1.40	\$770
Discount for Open Cows	10%	open		\$77
Total Revenues per Cow				\$693
Expenses				
Pasture Maintenance	2.0	acres	\$25.00	\$50
Hay	2.5	ton	\$75.00	\$188
Mineral				\$35
Vet				\$25
Breeding				\$40
Marketing				\$27
Machinery				\$20
Trucking				\$10
Breeding Stock Depreciation				\$125
Other				\$15
Total Expenses per Cow				\$535
<i>Return to Land, Labor, and Capital</i>				\$158

Cow-calf operators should ask themselves if this return adequately compensates them for their time and provides them with a reasonable return on their investment in the operation. For example, if a cow-calf operator wanted to receive a \$50 return for their labor and a \$50 return on each acre of pasture (2 acres per cow or \$100 total) utilized, our analysis would suggest that they would just reach that goal. However, it would leave almost nothing for depreciation /interest of equipment and facilities. As an example, \$3000 yearly depreciation and interest on equipment/facilities for a 30 cow operation would be an additional \$100 cost per cow. Using this example, the farm would have lost \$92 per cow when accounting for all costs.

A quick comparison of estimated 2015 and 2016 returns showcases how drastically profitability has changed. In the previous 2016 estimation, fall prices for 550 lb calves were assumed to be \$1.40 this fall. Using the Kentucky Livestock and Grain Market Report for the week ending October 16, 2015, a 550 lb steer / heifer average price would have been around \$1.81 per lb. Table 2 provides an estimate of 2015 profitability using this higher price level. Note that most costs are unaffected by the overall market level. Commission was adjusted upward to reflect the higher market prices, but other costs remain the same. One could argue that breeding stock depreciation should be adjusted upward as well, and clearly would be higher if a large number of bred heifers were purchased and added to the herd last year. But, if one takes a long term view and thinks about the average cow in their herd over time, breeding stock depreciation likely changes very little given the market. Note that estimated return to land, labor, and capital was \$356 per cow in the fall of 2015. Using the costs for land, labor, and capital from the previous example (\$250), this farm would have made a pure profit of \$106 per cow.

Table 2: Estimated Returns to Cow-calf Operation: Fall 2015				
Revenues				
Steer / Heifer Calf Average	550	lbs	\$1.81	\$996
Discount for Open Cows	10%	open		\$100
Total Revenues per Cow				\$896
Expenses				
Pasture Maintenance	2.0	acres	\$25.00	\$50
Hay	2.5	ton	\$75.00	\$188
Mineral				\$35
Vet				\$25
Breeding				\$40
Marketing				\$32
Machinery				\$20
Trucking				\$10
Breeding Stock Depreciation				\$125
Other				\$15
Total Expenses per Cow				\$540
Return to Land, Labor, and Capital				\$356

If our estimates for prices in fall 2016 are close to accurate, that would represent a 23% decrease in calf prices. However, return to land, labor, and capital is project to decrease by more than 56%. Simply put, the decrease in calf prices since last year is almost 100% profit and this is probably a point that has not been made clear enough over the last 12 months. The profit picture for cow-calf operations has changed drastically in a very short amount of time.

We encourage you to go through and modify the above analysis for your situation. However, if you are honest about your costs and have reasonable expectations for what you need for your labor, paying off depreciation and interest on equipment/facilities, a return for pasture rent, etc., we don't see how anyone is making much or any true profit at current calf prices.

There was a Progressive Farmer article that came out about a half-year ago where the beef producer interviewed said they still saw good profit potential with the current market at the time and that they planned to continue expanding their cow herd. While we certainly don't see those profits, particularly at the slightly lower prices of late summer 2016, if enough cow calf operators think profits are still there and continue to expand the national herd, calf prices will continue to drop further. Trying to improve profitability in 2016 by expanding the cow herd is akin to trying to put out a brush fire with gasoline. Hopefully producers realize this and the current phase of cow expansion has already ended.