# CATTLEMAN'S CORNER

*Division of Agriculture Sciences and Natural Resources * Oklahoma State University* **MAY/JUNE 2015**


## Wet pastures and foot rot

*Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist*

Spring rains have filled the ponds and now the summer grass is ready to start growing vigorously. As the temperatures heat up, cattle will start to congregate around or in the ponds or other standing water. One of the challenges that cattle producers may face this summer is the occasional lame cow or yearling. "Foot rot" is a common cause of lameness in beef cattle on pastures. Foot rot is an infection that starts between the toes of the infected animal and usually is a result of the introduction of a bacteria through broken skin. The infection causes pain and the resulting lameness. The lameness can cause decreases in weight gain of young cattle, milk production decline of adult cows and lame bulls will be reluctant to breed.

Treatment of foot rot can be successful when the treatment is started early in the disease process. Most cases require the use of systemic antimicrobial therapy. Your local large animal veterinarian will advise you on recommended antibiotics and dosages for your situation. Severely infected animals that do not respond to initial treatments will need to be re-evaluated by the veterinarian and more involved treatments may be required to salvage the animal. There are other causes of lameness. Therefore a proper diagnosis is important before treatment begins.

Preventative measures revolve around prevention of mechanical damage to the foot. Recently brush-hogged weeds or brush stubble will often be very sharp and cut the skin between the toes allowing the entrance of the infective bacteria. Avoid forcing cattle to spend long periods of time standing in very wet lots or pastures. Utilizing a good mineral program that contains the micro minerals zinc, selenium, and copper will aid in disease prevention. A three year study in Kansas has shown that zinc methionine added to a free choice mineral supplement reduced the incidence of foot rot in steers grazing summer pasture .

Because cattle inflicted with foot rot are commonly treated with antibiotics, it is critical that producers follow their veterinarian's instructions and label directions precisely. Record the date, the dosage, route of administration, the lot number of the antibiotic given and the person giving the treatment. Then observe the drug withdrawal times completely before marketing the animals that have been treated. Read more about foot rot in cattle by downloading the Oklahoma State University Fact Sheet ANSI 3355 "Foot Rot in Cattle".

## Understanding wet hay

*Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist*

After several years of drought, rain in Oklahoma is allowing cool season forages to grow in abundance. Harvesting and baling cool season crops such as fescue and wheat hay is a challenge during a wet spring. The timing of the rains can make it difficult for cattlemen that are trying hard to put quality hay in the bale for next winter's feed supply. All producers that harvest hay occasionally will put up hay that "gets wet" from time to time. Therefore, ranchers and hay farmers need to understand the impact of "wet hay" in the tightly wound bales.

Extra moisture in hay can cause heat inside the hay bale or hay stack. Heat produced by the bale comes from two sources: **First**) biochemical reactions from plants themselves as hay cures. (This heating is minor and rarely causes the hay temperature to exceed 110 degrees F. Very little if any damage occurs if the hay never exceeds 110 F.); **Second**) Most heat in hay is caused by the metabolic activity of microorganisms. They exist in all hay and thrive when extra moisture is abundant. When the activity of these microbes increases, hay temperature rises. Hay with a little extra moisture may not exceed 120 degrees F., whereas, wetter hay can quickly exceed 150 degrees. If the hay rises above 170 degrees, chemical reactions can begin to occur that produce enough heat to quickly raise the temperature above 400 degrees and the wet hay can begin to burn and cause fires. Be wary of the fire danger of wet hay and store it away from buildings and other "good" hay just in case this would occur.

Heat damage causes hay to be less digestible, especially the protein. Heat damaged hay often turns a brownish color and has a caramel odor. Cattle often readily eat this hay, but because of the heat damage, its nutritional value might be quite low. Some ranchers have reported that "the cows ate the hay like there was no tomorrow, but they did very poorly on the hay".

Testing wet hay may be very important. Determining the internal temperature of large bales or stacks of hay should be done carefully. Make certain that checking the temperature in suspicious hay is done safely. Read the E-Extension Fact Sheet "Preventing Fires in Baled Hay and Straw" (http://www.extension.org/pages/66577/preventing-fires-in-baled-hay-and-straw#.VV-WALco7L8).

Testing the protein and energy content of stored wet hay will allow for more appropriate supplementation next winter when that hay is fed. Moldy hay could be a source of mycotoxins that could present several health problems for cattle. Many animal disease diagnostic laboratories can examine feedstuffs for mycotoxins or can recommend laboratories that do such testing.

## Another look at fall versus spring calving

*Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist*

As cow herd managers monitor the pasture conditions this spring and make decisions about rebuilding a depleted cow herd, some may wish to rethink the time of year that breeding and calving take place. New data from Tennessee on a fescue-based forage system gives us more information about the direct comparison between fall and spring calving.

In the April, 2013 edition the Professional Animal Scientist, they reported on nineteen years of data comparing fall and spring calving on an experiment station in that state. Over a span of 19 years, they had data from 478 spring-calving cows and 474 fall-calving cows. The fall calving cows weaned 193 more calves (over those 19 years ) than did the spring calving cows. The spring-born calves grew faster and had higher 205 weights, but the fall-calving herd had increased income because of greater number of calves and a reduced need for replacement heifers.

The endophyte-infected fescue may have been a factor in the summer breeding seasons that resulted in significantly fewer calves per cow over the 19 years. The wild type endophyte (Neotyphodium coenophialum) has been shown to reduce a cow's ability to regulate body temperature which would be an important trait in summer breeding seasons. Source: A comparison of spring- and fall-calving beef herds grazing tall fescue. Campbell, et al., 2013. Prof. Anim. Sci. vol. 29, no. 2, pp 172-178.

Oklahoma producers using native or Bermuda pastures should also consider fall-calving. Avoiding the intense heat of an Oklahoma summer during breeding will improve reproductive efficiency. Fall-calving occurs when temperatures are more moderate for those 2 am heifer checks and calf survival is higher due to less cold stress and dry calving pastures.

Fall-calving cows should be in excellent body condition at calving and therefore return to estrus cycles on time to breed for next year's calf crop. Winter weather in the Southern Plains does not appear to impair re-breeding efficiency in most winters.

Examine when would be the best time to breed the cows or replacement heifers—in the late spring/early summer or in the late fall/early winter? Your answer may depend on the forage base, your other farming enterprises, and off-farm job responsibilities. Fall-calving makes a lot of sense in Oklahoma if the owner/manager can make it work with other responsibilities.

## North American cattle trade impacts U.S. cattle supplies

*Derrell S. Peel, Oklahoma State University Extension Livestock Marketing Specialist*

Canada and Mexico have been a source of feeder and slaughter cattle for many years. This is in addition to bilateral trade in beef, with both countries among the major markets for U.S. beef exports as well as major sources of beef imports. In 2014, U.S. imports of Canadian slaughter steers and heifers represented 1.7 percent of total U.S. steer and heifer

slaughter. These yearling slaughter cattle imports were up 13.9 percent from 2013 and included a 24 percent increase in slaughter heifers compared to a 7.4 percent year over year increase in slaughter steer imports. With the latest trade data for March, year to date slaughter steer and heifer imports from Canada are down 40.6 percent from last year based on a 49.5 percent decrease in slaughter steer imports and a 27.4 percent decrease in slaughter heifer imports.

Total feeder cattle imports from Mexico and Canada in 2014 amounted to 4.8 percent of the total 2014 U.S. calf crop. This was the largest relative contribution of Canadian and Mexican feeder cattle to U.S. feeder supplies in data back to 1992. U.S. imports of feeder cattle from Canada are up 11.7 percent year over year from January to March. This follows a 37.8 percent year over year increase in Canadian feeder cattle imports in 2014. Canadian feeder imports in 2014 consisted of a 60 percent increase in feeder heifers from the previous year. However, year to date imports of Canadian feeder heifers are down 10 percent compared to the January to March period one year ago. In contrast, feeder steer imports are up 57.1 percent so far this year. The weight of Canadian feeder cattle imports is also quite different this year compared to last. For the year to date, imports of Canadian feeder cattle over 700 pounds are up 58.0 percent from last year while imports of Canadian feeder cattle less than 700 pounds are down 10.6 percent.

Virtually all U.S. imports of Mexican cattle are feeder cattle. Imports of Mexican feeder cattle are up 7.5 percent in the first three months of 2015 compared to last year. This follows a 12.8 percent annual increase in Mexican feeder imports in 2014. Similar to Canada, 2014 Mexican feeder imports included more heifers, up 23.3 percent year over year compared to a 10.4 percent increase in Mexican feeder steer imports. However, year to date in 2015, imports of Mexican feeder heifers are down 17.3 percent while steer imports are up 13.1 percent. Mexican feeder cattle are generally lighter in weight than Canadian feeder cattle with most Mexican feeders split between the 450 to 700 pound category and those under 450 pounds. Few Mexican feeder cattle imports weigh more than 700 pounds. Compared to last year, year to date imports of Mexican feeder cattle between 450 and 700 pounds are up 30.7 percent while imports of feeder cattle under 450 pounds are down 20.3 percent.

Several implications are indicated from these trade flows. First, fewer heifers are being imported from Canada and Mexico suggesting that domestic herd expansion may be beginning in 2015 in both countries. Second, fewer heifers and generally tight cattle inventories in both Mexico and Canada may limit total cattle imports additionally later in the year. Feeder cattle imports may total close to year ago levels and could end up smaller if monthly imports drop sharply later this year. Finally, imports so far this year from both Canada and Mexico have included fewer lightweight animals than is typical in each market. This suggests that imports are somewhat "front-loaded" with respect to weight, which will have some implications for total U.S feeder supplies later in the year.

## Proper injection sites to remember at calf-working time

*By Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist*

The month of May is traditionally the time when "spring round-ups" take place. This is the time that large and small cow/calf operations schedule the "working" of the calves. As the majority of the calves reach their second month of life, it is time to castrate the male calves and immunize all of the calves to protect them against blackleg. Also the new information suggests that in some situations, calves may be vaccinated for the respiratory diseases, i.e. IBR and BVD. Check with your veterinarian for vaccination advice.

Correct administration of any injection is a critical control point in beef production and animal health. There is a negative relationship between meat tenderness and injection sites, including injection sites that have no visible lesion. In fact, intramuscular (IM) injections, regardless of the product injected, may create permanent damage regardless of the age of the animal at the time of injection. Tenderness is reduced in a three-inch area surrounding the injection site. **Moving the injection-site area to the neck stops damage to expensive steak cuts.** Therefore, cow/calf producers should make certain that their family members, and other hired labor are sufficiently trained as to the proper location of the injections before the spring calf-working begins.

Give injections according to label instructions. Subcutaneous (SQ) means under the skin, intramuscular (IM) means in the muscle. Some vaccines (according to the label instructions) allow the choice between intramuscular (IM) and subcutaneous (SQ). **Always use subcutaneous (SQ) as the method of administration when permitted by the**

**product's label.** Remember to "tent" the skin for SQ injections unless instructed otherwise by the manufacturer. Proper injection technique is just one of many components of the Beef Quality Assurance effort that has had a positive impact on the entire United States beef industry.

Another important aspect of the Beef Quality Assurance effort is keeping of accurate treatment records. Treatment records should include:

- Individual animal/group identification
- Date treated
- Product administered and manufacturer's lot/serial number
- Dosage used
- Route and location of administration
- Earliest date animal(s) will have cleared withdrawal period
- Name of person administering the product

Treatment records for cattle should be stored and kept for a minimum of three years after the animal(s) have been sold from your operation. Beef producers are encouraged to learn and practice Beef Quality Assurance Guidelines. You can learn more about the Oklahoma Beef Quality Assurance program by going to the website: http://oklahomabeefquality.com/ The Oklahoma Beef Quality Assurance Manual can be downloaded from that site. Examples of treatment records to be kept and stored are available from the Oklahoma Beef Quality Assurance Manual or the Oklahoma Beef Quality Assurance program website.

## Unusual cattle markets

*Derrell S. Peel, Oklahoma State University Extension Livestock Marketing Specialist*

Unusual market conditions lead to unusual incentives that result in unusual market behavior. This makes markets unusually difficult to figure out. There is considerable variability in views across the industry about the current and coming fed cattle market for the remainder of 2015. And for good reason; we are seeing extremes in conditions and behavior that are clouding the picture.

The April 1 cattle on feed inventory was essentially unchanged from one year ago. However the makeup of that inventory was unique in several respects. The number of heifers on feed was not only down 10.1 percent from one year ago, it was the lowest quarterly heifer on feed number since 1996. This is not surprising given the anticipated heifer retention and herd expansion that is underway. Fewer heifers in feedlots would naturally suggest that steers make up a bigger percentage of total cattle on feed. More than that however, the number of steers on feed actually increased in April, up 5.4 percent year over year, to the highest quarterly steers on feed total since January, 2008. As a result, the April 1, 2015 steers on feed total was 69 percent of total cattle on feed, 2.4 percent higher than one year ago and a new record level. Until now, the 2014 total was tied for a record percentage of steers on feed that only occurred once prior (in 2005) in data back to 1996. It appears that feedlots have drawn heavily from available steer supplies to maintain feedlot inventories so far this year.

Variability in placement weights also adds to the challenge of determining the timing of fed cattle production. For many months, monthly feedlot placements have tended to swing between large proportions of lightweight cattle (less than 600 pounds) and placements of heavy feeders (over 800 pounds), often with fewer cattle in the traditional feeder placement weight categories of 600 to 800 pounds. The "tails" of the placement weight distribution add to the difficulty because there is no way to estimate the average weight in the category, especially for the heavy feeders. Average placement weights vary because of changes in average animal size and because of changes in the steer to heifer mix.

March placements consisted of 39.4 percent of placements over 800 pounds, the highest monthly level for the weight category in available data back to 1996. The average of January through March placements has the 800-plus pound category averaging 35.8 percent of total placements compared to 31 percent for the same period one year ago. A 12 month moving average of placements by weight group confirms that placements of 800-plus pound feeder cattle are at a

record level at the current time. The average weight of this group could vary from just over 800 pounds to over 900 pounds and change the timing of marketings of these animals by a month. A casual review of auction reports suggests that significant numbers of steers up to and exceeding 1,000 pounds have been marketed this spring. This may suggest a somewhat bigger seasonal increase in feedlot marketings into the third quarter and a bigger tightening of fed cattle supplies late in the year. However, variability in the total number of placements and in the weight distribution in recent months makes this anything but a clear picture.

Steer and heifer carcass weights continue to push well about year ago levels as a result of several factors. On the one hand, heavier carcass weights offset declining cattle slaughter to reduce the impact of declining beef production in response to high beef prices. Steer and heifer slaughter is down 7.1 percent so far this year while total beef production is down only 5.2 percent, due to increased carcass weights. Both feedlots and packers are complicit in pushing slaughter cattle to heavier weights as a result of this general market incentive.

Feedlots continue to have additional production incentives to feed cattle longer and to bigger weights, as they have had for several months. Limited supplies of feeder cattle, record high feeder cattle prices and lower feed costs all contribute to feedlot incentives to hold cattle longer, which keep feedlot inventories higher despite declining feedlot production. Data from several Kansas feedlots confirms that average days on feed are at record levels. The increase in days on feed for heifers is even more pronounced than for steers, contributing to the lack of seasonal decline in heifer carcass weights so far this year.

In pursing market incentives to delay cattle marketings and push cattle to bigger weights, feedlots are trading animal performance on the animals currently in the feedlot for the costs of replacing inventories with new animals. The Kansas feedlot data has shown for several months that average daily gains are lower year over year and feed conversions are higher; both expected outcomes of feeding heavier animals longer. As a result, feedlot cost of gain has not decreased as much as lower corn prices would suggest because poorer performance is offsetting some of the cheaper feed cost. This tradeoff suggests there is a limit to how far feedlots can push fed cattle weights. It also suggests that the incentive could change abruptly if feed prices were to increase.

Finally, the relative role of dairy animals in total feedlot production is at an unprecedented level. Declining beef cattle inventories and declining veal slaughter (most of which is dairy calves) mean that dairy animals accounted for nearly 26 percent of the net (adjusted for veal slaughter) 2014 calf crop; a record level. Dairy calves are typically placed on feed at very light weights and stay in feedlots up to a year. This means that relatively large numbers of dairy calves are impacting fed cattle markets in 2015. Analysts often uses measures such as estimated cattle on feed over 120 days to assess the currentness of feedlot marketings. However. such measures are difficult to interpret when dairy calves play a proportionately larger role in cattle feeding as they do now.

## Realistic expectations for estrous synchronization and AI programs

*Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist*

Producers that are wanting to improve the genetic makeup of their beef herds very often turn to artificial insemination (AI) as a tool to accomplish that goal. Many times, these producers have very high expectations as they begin the first season of artificial breeding. Perhaps they have heard other producers tell of situations where “near-perfect” pregnancy rates resulted from THEIR artificial insemination program. Everyone wants to get every cow or heifer bred as they start the labor and expense of an AI program. However, the rules of biology do not often allow for 100% pregnancy rates in most situations.

First of all it is important to understand several terms.

**Estrous response rate:** the percentage of cows found to be cycling in response to an estrus synchronization protocol. In other words, if we put 100 cows through the working chute and give them estrous synchronization drugs, and only 80 of those cows responded to the estrous synchronization products, then we have an “estrous response rate” of 80 percent. Perhaps some of the cows were not “ready” because they were later calving or they were in poorer body condition. If we are breeding only after they are detected in heat, then only 80 of the original 100 cows would be bred to

AI. The effects of the drought may have an impact on the body condition of cows going in to the estrous synchronization protocols and adversely impact the percentage of cows responding to the synchronization products.

**Conception rate:** the percentage of the cows that were actually inseminated that were palpated and found to be pregnant 60 or more days later. In other words, of the 80 cows in the above example, that were found in heat and inseminated, IF we later found that 70 percent of those "settled" or became pregnant, we would have found 56 cows pregnant.

**Pregnancy rate:** the percentage of cows that were initially started on the estrous synchronization protocol that actually became pregnant. In the above example, 56 of the original 100 cows became pregnant to the AI program resulting in a pregnancy rate of 56%.

Therefore, the **Estrous response rate** X **Conception rate** = **Pregnancy rate**.

In this example: **80% Estrous response** X **70% Conception** = **56% Pregnant.** The above example is hypothetical, yet very much close to the expected outcome of a successful synchronization and AI program. If heat detection is incorporated as part of the system, then it becomes another very important part of the equation.

Research conducted that evaluated different synchronization protocols very often illustrated variables other than protocol were most important. Differences in body condition of the cattle, experience and skill of the AI technicians, and weather influences, often played larger roles in the pregnancy rates than did the synchronization protocol. There was more difference expressed between operations than between the synchronization methods chosen.

Help in choosing the synchronization protocol that best suits your situation can be found courtesy of the Applied Reproductive Task Force. This group of scientists list preferred protocols for both replacement heifers and adult cows. Download their fact sheet at http://beefrepro.unl.edu/pdfs/Protocols%20for%20Sire%20Directories%202015.pdf

We hope everyone has 100 percent pregnancy rates this year and every year, **BUT, *lets also be realistic*.**

## Evaluate udder soundness soon after calving to use as culling criteria

*Glenn Selk, OSU Professor Emeritus, Oklahoma State University*

Every year at "preg" checking time, ranchers evaluate cows and make decisions as which to remove from the herd. One criteria that should be examined to cull cows is udder quality. Beef cattle producers are not as likely to think about udder health and shape as are dairy producers, but this attribute affects cow productivity and should be considered. It may be easier to be accurate in your culling decisions, if you exam the udder soundness of the cows shortly after calving when they are at the peak of lactation and the udder is as large as at any time. Take time now during the peak of lactation to write down which fall-calving cows have unsound udders.

The heritability estimates of udder characteristics are variable. A study done in Brahman cattle for the heritability of udder soundness indicated that progress could be made by selecting for udder soundness. They reported that 25% of the differences in udder soundness was due to genetics. Beef Improvement Federation Guidelines have suggested that the heritability of udder soundness in beef cattle is estimated at .16 to .22 which means that some progress can be made by selecting against unsound udders.

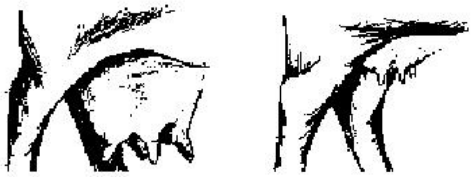
Recent new research at Kansas State University (Bradford, 2014 KSU Cattlemen's Day) with large numbers of Hereford data has given even greater hope that improvement in udder quality can be made. They found heritabilities of .32 for overall udder score, .31 for suspension, and .28 for teat size. Plus, genetic correlations between traits were strong (.83). This means that selection for one trait (teat size or suspension) will result in improvement in the other trait.

An experiment conducted at the Range Cow Research Center near Stillwater gives some indication as to the impact of mastitis on beef cow performance. They found that cows with one or two dry quarters had calves with severely reduced weaning weights (50 - 60 pounds) compared to cows with no dry quarters. In today's world with higher calf prices, this represents a sizeable economic loss at weaning time.

An evaluation system for udder soundness has been developed and used by some breeds. Teat shape and udder suspension are the two primary characteristics evaluated. Below are drawings representing unsound udders on the left and sound udders on the right.

The first two drawings are teat shape. The very "funnel" shaped teat may have been mastitic in the past. New born calves will find it difficult to nurse such a teat.

Teat Shape (above) : Note the large "funnel-shaped" teats on the cow on the left. A sound udder for teat shape is on the right.



Udder Suspension (above): Weak udder suspension leads to "pendulous" broken-down udders that also are very difficult for young calves to nurse. A sound udder with a strong udder suspension is on the right.

Both cows on the left would be excellent candidates for culling at the next weaning of their calves. In addition, daughters of cows with poor udders should be expected to have less than desirable udders as well.

## Beef herd rebuilding: What's next?

*Derrell S. Peel, Oklahoma State University Extension Livestock Marketing Specialist*

The long-awaited end to beef cow herd liquidation happened in 2014 as the industry abruptly switched to expansion. The 2.1 percent increase in beef cow numbers in 2014 was more than generally expected but not a big surprise as the conditions were right for such a turnaround. Modest growth in heifer inventories has occurred since 2012. It wasn't until 2014 that beef cow culling decreased enough to combine with heifer retention and result in herd growth. This leads to a number of questions including how much additional herd growth is needed; how fast can it happen; and where will it take place. The answers to these questions are not completely apparent at this time and will depend on a number of factors yet to be determined in the coming years. However there are some indications already in place.

After a brief attempt at expansion in 2004 and 2005, the industry has experienced unplanned herd liquidation. I mean unplanned in the sense that it was not typical cyclical factors that caused the liquidation. It was not, for the most part, low cattle prices but rather cost shocks that caused low returns and liquidation between 2006 and 2010. Widespread drought forced additional liquidation between 2011 and 2013. The question of how much growth is needed will depend on domestic and international market conditions over the next few years as herd growth occurs. It will depend also on things such as carcass weights that will determine total beef production relative to slaughter rates. At this point I see little reason why the cow herd should not rebuild to at least the level of the truncated expansion in 2007-2008…roughly 32.5 million head. That would suggest another 2.8 million head beyond the January, 2015 level. This implies total herd growth of nearly 9.5 percent in the next few years. Time and market conditions will, however, determine exactly what the size potential is for the industry.

How long will it take? At the 2014 rate of 2.1 percent per year, it would take until 2019 to surpass the 32 million head level. In the last complete cyclical expansion from 1990-1995, the average annual herd growth rate was 1.4 percent. Leaving out the slow first year and tapering off the last year, the principal four years of expansion during this period averaged 2 percent per year. In the current expansion, a single year of faster growth is very possible but it is unlikely that an annual growth rate much above 2 percent could be maintained for two or three years consecutively. There are however, a number of regional factors that could slow down expansion. An average herd growth rate of 1.5 percent would take until 2021 to exceed 32 million head of beef cows. The question of how long is related to the question of where herd growth will take place.

In five Midwestern states from Missouri to Ohio, the beef cow herd in 2015 was 8.4 percent smaller than in 2008. In the Appalachian states of Kentucky, Tennessee and West Virginia, the 2015 beef cow inventory was down 15 percent compared to 2008. In both of these regions, the decrease in beef cows is largely the result of decreased forage acreage due to expanded crop production. Lost pasture and hay production in these regions is not likely to return quickly, if ever. The beef cow herd in these regions will grow but is unlikely to rebuild to previous levels. The Northern Plains states of Nebraska and the Dakotas experienced a modest 2.9 percent decrease in the beef cow herd between 2008 and 2015. Similarly, the 2008-2015 beef cow herd decrease in the Northern Rocky Mountain region of Montana and Wyoming was only 1.2 percent. These regions will likely experience herd rebuilding but the two regions together are currently only 155 thousand head below the 2008 level. The beef cow herd in other regions is down as well including the South (down 3.8 percent; the Great lakes region (down 4.7 percent); the Gulf region (down 8.1 percent); the Southern Rocky Mountain region (down 2.8 percent) and the Southwest (down 9.4 percent). These five regions combined are down just over 500 thousand head from 2008 and will likely rebuild but drought will limit or slow the rate of growth in Southwest and Southern Rocky mountain regions.

The 2015 beef cow inventory of the Southern Plains region (Kansas, Oklahoma and Texas) was down 13.2 percent from 2008, a decrease of over 1.1 million head. This represents 42 percent of the total beef cow herd decline between 2008 and 2015. This region will clearly play a central role in U.S. beef cow herd expansion in the coming years. Parts of the region are still experiencing severe to exceptional drought conditions. The 6.2 percent herd expansion in 2014 in the Southern Plains may be difficult to maintain if drought conditions do not improve significantly. Moreover, herd expansion could be halted or reversed if drought conditions redevelop in the region.

While the final beef cow herd total for this expansion is unknown, it seems likely that the industry will be rebuilding or trying to rebuild for the remainder of the decade. Much of the herd growth will be in the Southern Plains with proportionately more growth likely in the western half of the country compared to the eastern half.

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