

# **COW/CALF CORNER**

The Newsletter

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## **Can We Rebuild the Cow Herd? Part 2**

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

A dramatic jump in demand for corn, which began in late 2006, has resulted in sharply higher prices for all crops in the U.S. A simple average across the eight major cultivated crops shows

that 2012 crop year prices are expected to be 165 percent higher than in 2005. This has provoked intense competition among crops for land resources with crop market prices doing short term battle each year for acreage to plant. The epicenter of this crop frenzy is naturally in the Midwest and is reflected in the phenomenal jump in land values and rental rates in the region.

Longer term impacts on land use are also expected as a result of this new agricultural environment. Though data is limited, there are strong indications that these long term changes have begun and they have significant implications for the beef cattle industry. The 2007 Natural Resources Inventory (NRI) showed that in addition to 305 million acres of cultivated cropland, an additional 119 million acres are used for pasture along with 52 million acres of non-cultivated cropland (mostly permanent hay). These 171 million acres of pasture and “hay” land are arable, meaning they can be farmed. A majority of these acres occur in and around the major cropping areas and generally in the eastern half of the country. These acres do not include another 400 million acres of rangeland (plus forest and federal lands) that are not arable. Rangeland is mostly located in the drier central and western regions of the U.S.

Though converting perennial pasture and hay crops to cultivated crops is not an easy or quick process, high crop prices will logically attract some of these acres for cultivated crop production over time. At this point there is little data to confirm how much pasture and hay land is being converted to crop production. The 2012 NRI and Agricultural Census data (which will be available in several months) are expected provide the first documentation of a process that is likely to continue for many more years.

In the absence of land use data, changes in cattle inventories across states already indicates some of the anticipated regional impacts of high crop values. From January 1, 2007 to 2012, the U.S. beef cow herd decreased by 2.76 million head or 8.5 percent. The decrease is much more pronounced in the Midwest and surrounding regions, including the states of Illinois, Indiana, Iowa, Minnesota, Missouri, Kentucky and Tennessee. In these states, the five year decrease in beef cow inventory ranged from 11.4 percent to over 22 percent with an average of a 14.2 percent decrease. By contrast 12 states in the Great Plains and Rocky Mountain regions experienced beef cow herd changes that ranged from an increase of five-plus percent to a 7.5 percent decrease with an average of 2.6 percent decrease across the region. Texas and Oklahoma experienced sharp decreases from 2011 to 2012 due to drought but had a similar 3.1 percent decrease in the 2007-2011 period. This indicates that the beef cow herd is decreasing more rapidly in regions where competition with crops is greater. As a result, an increasing share of the total beef cow herd will be located in drier regions of the country in the future. Interestingly, this same phenomenon is occurring in other major beef producing countries such as Brazil, Argentina, Uruguay and Paraguay and for the same reasons.

Depending on their location, it is not surprising that some cattle producers see less potential for herd rebuilding than others. Beef cow herds are less likely to rebuild in major crop production regions while predominantly forage areas have considerable potential for herd expansion. There is little doubt that some of the most productive pasture and hay land is being converted for crop production which highlights the challenge of rebuilding the beef cow herd in more marginal areas. However, high crop prices increase forage value as well and that changes the incentives for how land is used and managed. Forage production, even on rangeland that does not compete directly with crop production, is worth more now. Many years of cheap grain kept forage values low and the result is that forage production and use has not been managed as efficiently as it can be.

Increased forage value opens up a wide variety of possibilities, in many regions, to manage forage for greater productivity and to manage forage use more efficiently. The dramatic increase in use of corn crop residue the last two years is one example of the response to these incentives. Two other examples include reducing hay wastage from round bales and, in Oklahoma and similar areas, more Red Cedar control to increase forage production. In many regions of the country there is considerable potential for adoption of new forages and new forage systems to increase cattle production and/or extend grazing seasons.

This continuing discussion of the challenges and opportunities for rebuilding the U.S. cattle herd will continue in Part 3 with a discussion of who will rebuild the cow herd.

## **Short Forage – Big Problems**

Dave Sparks, DVM, Oklahoma State University Extension Area Veterinarian

I hear it every day. All across Oklahoma ranchers are looking at short winter pastures, scarce and expensive hay, and high supplement costs. The temptation is to hope that the cows can make the winter and then everything will be better next year. Unfortunately for some producers who fail to meet the nutritional demands, there will not be a next year. Years ago I had a mentor that reminded me often, “You just can’t starve a profit out of them.”

In times of scarce forage, toxicity problems are intensified. Lots of corn stalks and other crop residues have been baled this year. One of the big problems in baled crop residues is accumulated nitrates. It can also be a problem in the big stemmed tall cultivated grasses. We don’t normally associate nitrate toxicity problems with Bermuda or prairie hay, but it can occur in drought years, especially if the hay was baled late and has a significant amount of pig weed or curly dock. These plants are nitrate accumulators and in dry times their growth can outrun the growth of the grass. Nitrates can cause death of the cattle consuming the hay, but they cause

abortion in cows at an even lower level. If the nitrate levels are high it can't be used for livestock unless it is ground and thoroughly diluted with other feeds. If the nitrate levels are suspect the hay may be used by feeding it to non-pregnant yearlings. Bova Pro® boluses can help cattle compensate for moderate nitrate levels. If there is any doubt, especially with crop residues, sorghums, sudan, johnsongrass, or weedy hay, have the hay tested for nitrates. The few dollars you spend can save a disaster.

As ponds and creeks get lower, the water not only gets foul but also minerals and toxins become more concentrated. Sulfur amounts that may not be a problem in a pond at normal level can easily exceed toxic levels in low ponds and result in poor performance or death. Bluegreen algae is a problem that causes sudden death and is usually found in pond water in the summer. This year, however, the OSU Diagnostic Lab is still finding bluegreen algae in water samples submitted. Old or thin cows may expire in the mud trying to get to drinkable water. This will likely be more and more of a problem as the winter progresses. Perhaps the biggest and most widespread water problem producers face is decreased consumption. As ruminants, cattle not only require water for metabolic functions but also for digestive functions. Many ponds still have water, and the cows are drinking it, but it is so foul tasting and smelling that they only drink minimal amounts. The rumen can't work properly if it isn't full of water. If you are not providing clean water in sufficient quantities for cows to consume adequate amounts, you may be wasting the high priced supplemental feed you are paying for.

The trend towards feeding round bales has saved a lot of labor but it can also bring on other problems. Always retrieve and destroy twine and netting. Every winter many cows die from ingesting these plastic items which then cause intestinal blockage. Be sure to spread the hay far enough, or use sufficient hay feeders to insure that the weak, old, or timid cows get their share.

Malnutrition will claim the lives of many cows this winter, and it may eliminate the production of many more. Available nutrients are utilized in a predictable priority. The first priority is body maintenance such as circulatory and respiratory functions and maintaining body temperature. The second priority is lactation. Only when these priorities are met and more nutrients are available can the cow meet her reproductive requirement and become pregnant. Simply put, cows in poor body condition simply can't breed back efficiently. As the winter progresses adverse weather increases the maintenance requirement and the problem worsens. You may marginally make it through the winter with thin cows that just can't breed back. That winter feed bill looks awfully expensive if there is no paycheck next year to cover it.

Now is the time to take a realistic look at your winter program. If you haven't already pregnancy checked your cows you should do it now. Before we get farther into the feeding period would be

a great time to eliminate the expenses involved in wintering open cows, old cows, poor mothers, poor producers, and cows with too much “attitude.” The salvage value of these cows may help you purchase enough feed to arrive in the spring with your best cows in good shape and ready to breed back while doing a better job of milking for the calves they have by their side. If you decide to save replacement heifers when it rains again you will be saving these replacements from your most profitable cows.

Your Oklahoma State University County Extension Educator can help you with the feed, forage, and water testing you may need as well as helping you to find a least-cost program that will meet the requirements of your cows.

## **Storing Natural Colostrum for Optimum Passive Immunity**

Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

A previous article about commercially available colostrum substitutes has spawned questions about natural colostrum from a cow that lost a calf or from a dairy cow. An important factor that influences colostrum quality (immunoglobulin concentration) is the age of the cow. Heifers have poorer quality colostrum while older cows have the best quality colostrum. Another very important factor is milking stage. In general, colostrum immunoglobulin concentration is halved with each successive milking, therefore the first milking colostrum has twice the immunoglobulin content of the second milking colostrum. Colostrum leakage and premilking both adversely influence colostrum quality. Purchasing colostrum from other farms should be done with caution. Diseases such as Johne’s Disease may be transmitted from one operation to another via colostrum.

Cow calf producers are aware that natural colostrum must be ingested by baby calves within 6 hours of birth to acquire satisfactory passive immunity. However some calves do not have ample opportunity to receive colostrum. Perhaps the mother is a thin two-year-old that does not give enough milk or the baby calf was stressed by a long delivery process and is too sluggish to get up and nurse in time to get adequate colostrum. These calves need to be hand fed stored colostrum in order to have the best opportunity to survive scours infections and/or respiratory diseases.

Colostrum can be refrigerated for only about 1 week before quality (immunoglobulin or antibody concentration) declines. If you store colostrum, unfrozen be sure that the refrigerator is cold (33-

35°F, 1-2°C) to reduce the onset of bacterial growth. If the colostrum begins to show signs of souring, the quality of the colostrum is reduced. The immunoglobulin (very large protein) molecules in colostrum that bring passive immunity to the calf will be broken down by the bacteria, reducing the amount of immunity that the colostrum can provide. Thus, it is important that colostrum be stored in the refrigerator for only a week or less.

How long can the frozen colostrum be stored? We often answer this question flippantly by saying, "just as long as you would store frozen fish to eat!" Colostrum may be frozen for up to a year without significant breakdown of the immunoglobulins. However this is one example where improved technology is not in our favor. Frost-free freezers are not the best for long-term colostrum storage. They go through cycles of freezing and thawing that can allow the colostrum to partially thaw. This can greatly shorten colostrum storage life. Freezing colostrum in 1 quart in 1 or 2 gallon zip-closure storage bags is an excellent method of storing colostrum. Many producers have had great success using the zip-closure bags. Use two bags to minimize the chance of leaking, and lay them flat in the freezer. By laying the bags flat, the rate of thawing can be increased, thereby reducing the delay between time of calving and feeding. The freezer should be cold (-20°C, -5°F) - it's a good idea to check your freezer occasionally. Much more information about colostrum use and transfer of passive immunity is available from the [OSU Fact Sheet F-3358 Disease Protection of Baby Calves](#).

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