COW/CALF CORNER

The Newsletter

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Beef Cow Herd Dynamics: What is Possible in 2011?

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The much anticipated USDA Cattle report confirmed that the beef industry is beginning 2011 with a small cow herd, limited replacement heifers and even tighter feeder supplies. The beef cow herd decreased 1.6 percent in 2010 to a January 1, 2011 total of 30.9 million head. The inventory of beef replacement heifers dropped 293 thousand head to 5.16 million head available as of the beginning of 2011. Despite smaller replacement heifer inventories, estimated feeder supplies decreased by 3.3 percent compared to a year ago, as a result of aggressive feedlot

placements late in 2010. The question of how much herds expand in 2011will affect beef production in both the short run and the long run.

Possible beef cow herd expansion in 2011depends on several factors including how aggressively producers are trying to expand and what Mother Nature will allow the industry to do. Both of these are uncertain as producer intentions are not clear and the potential for significant drought continues to grow this winter. More fundamentally, the inventory numbers themselves suggest limits on what is possible and the implications of various expansion scenarios. Herd expansion will depend on the net change in cow numbers that result from cow culling and heifer placement in the herd. Cow culling has been at very high levels the last three years and the percent of the beef cow herd culled in 2010 was the highest level of any time in the last twenty years.

Although the number of heifers available as replacements is known from the inventory report, changes in the herd inventory over the year will depend on the percentage of heifers that actually enter the herd. In the last twenty years, an average of about 53 percent of reported replacement heifers on January 1 actually enter the herd during the year. The remaining heifers end up in the feeder supply for one reason or another. Over the last twenty years, this value has varied from a low of 45 percent to a high of about 60 percent, with one spike up to 69 percent in 1993. Not surprisingly, this percentage tends to increase during herd expansion and decrease during liquidation. In fact, this percentage often increases before the replacement heifer inventory begins to increase and is thus something of a leading indicator of herd expansion. Interestingly, this value increased sharply in 2009 and 2010, and although no herd expansion occurred, the implication is that herd decreases would have been more pronounced without this increased intensity of heifer placement. The actual number of heifers entering the beef herd increased each of the last three years because a higher percentage of a smaller replacement inventory was being utilized. In fact, the 2010 value of 57 percent was the fourth highest percentage of replacement heifers entering the herd in the period since 1990. The three higher percentages occurred in 1990, 1991 and 1993, all herd expansion years.

What is the impact on beef cow herd size if the trends of 2010 continue in 2011? Given the inventory values for January 1, beef cow culling (slaughter) and heifer placement at last year's rates would result in approximately another 1.9 percent decrease in the beef cow herd by January 1, 2012. A cow culling rate at the slightly lower 2008-2010 average would result in roughly a 1.5 percent decrease in the herd at current heifer placement rates. If the heifer placement rate drops to an average level, the herd size would decrease by 2 to 2.5 percent this year.

Is it possible to increase the beef cow herd in 2011? It will take roughly a 15 percent drop in beef cow slaughter year over year, at current heifer placement rates to hold the beef cow herd at current levels. A 15 percent drop in cow slaughter combined with even higher heifer placement rates could support up to a 0.5 percent increase in the beef cow herd. The required cow culling and heifer placement rates are possible but both would be near the limits of what has been observed in the past twenty years. However, even though 15 percent decreases in cow slaughter in one year have been observed in previous cattle cycles, strong cull cow values makes this less likely now. These reductions in cow slaughter and increased heifer placements have significant implications for slaughter supplies in 2011. Given, these limits, it appears that cow herd growth in 2011 is likely to be modest, at best, even if producers are ready and Mother Nature cooperates.

Re-warming Methods for Severely Cold-stressed Newborn Calves

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Several years ago, an Oklahoma rancher called to tell of the success he had noticed in using a warm water bath to revive new born calves that had been *severely cold stressed*. A quick check of the scientific data on that subject bears out his observation.

Canadian animal scientists compared methods of reviving hypothermic or cold stressed baby calves. Heat production and rectal temperature were measured in 19 newborn calves during hypothermia (cold stress) and recovery when four different means of assistance were provided. Hypothermia of 86 degrees F. rectal temperature was induced by immersion in cold water. Calves were re-warmed in a 68 to 77 degrees F. air environment where thermal assistance was provided by added thermal insulation or by supplemental heat from infrared lamps. Other calves were re-warmed by immersion in warm water (100 degrees F.), with or without a 40cc drench of 20% ethanol in water. Normal rectal temperatures before cold stress were 103 degrees F.

The time required to regain normal body temperature from a rectal temperature of 86 degrees F. was longer for calves with added insulation and those exposed to heat lamps than for the calves in the warm water and warm water plus ethanol treatments (90 and 92 vs 59 and 63, respectively). During recovery, the calves re-warmed with the added insulation and heat lamps produced more heat metabolically than the calves re-warmed in warm water. This represents energy that is lost from the calf's body that cannot be utilized for other important biological

processes. Total heat production (energy lost) during recovery was nearly twice as great for the calves with added insulation, exposed to the heat lamps than for calves in warm water and in warm water plus an oral drench of ethanol, respectively. By immersion of hypothermic calves in warm (100 degrees F) water, normal body temperature was regained most rapidly and with minimal metabolic effort. No advantage was evident from oral administration of ethanol. (Source: Robinson and Young. Univ. of Alberta. J. Anim. Sci., 1988.)

When immersing these baby calves, do not forget to support the head above the water to avoid drowning the calf that you are trying to save. Also it is important to dry the hair coat before the calf is returned to cold winter air. If the calf does not nurse the cow within the first few hours of life (6 or less), then tube feeding of a colostrum replacer will be necessary to allow the calf to achieve passive immunity by consuming the immunoglobulins in the colostrum replacer.

Obviously not every calf born in cold weather needs the warm water bath. However, this is apparently a method that can save a few *severely stressed* calves that would not survive if more conventional re-warming methods are used.