

COW/CALF CORNER

The Newsletter

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

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Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

2012 Drought Impact on 2013 Unclear at This Point

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

Widespread drought conditions so far in 2012 are clearly a large contributor to the current weakness in the cattle complex. There are numerous reports of early marketings of feeder cattle and cow liquidation which leaves no doubt that the drought is impacting cattle inventories and flows. However, the magnitude of these changes in cattle numbers is not clear yet so it is difficult to assess just how much impact might carry over into 2013. It is always difficult to determine drought impacts as they happen because one is never sure what would have happened in the absence of drought. Later, with the benefit of hindsight, the drought impacts may be more obvious. Adding to the difficulty this year is that most of the data is being compared to drought impacted numbers from last year so it is difficult to determine how conditions this year compare to a more normal average. There are two upcoming reports that may help clarify the situation although drought conditions will continue to change and drought assessment will be a dynamic process over the next months.

The July Cattle on Feed report is expected to show decreased June placements compared to last year. This follows the May report where placements exceeded the expectations for large placements. The unexpected increase in May was attributed mostly to drought forced early placements. June placements are expected lower partly because of one less business day this year. The question of drought impacts will not be whether June placements are lower than last year but how much lower? A decrease of 4-5 percent is needed to account for one less day so a placement value down 4 percent or less is really equal to or greater than last year and clearly significantly larger than expected. In the absence of drought this year, a double digit decrease in June placements would be likely. The most likely case is a decrease in the range of 5-10 percent which would indicate smaller placements than last year but larger than would have occurred without the drought. It seems clear that more cattle are entering feedlots earlier than anticipated

and it will impact feedlot marketings late in 2012 and into 2013. It is still not clear just how significant those changes will be.

The mid-year Cattle Inventory report will also be issued this week (courtesy of a one year reprieve from elimination by USDA-NASS). The July 1 beef cow inventory is expected to be down year over year but the question is how much will it be down? Has the drought been severe enough to already show significant herd liquidation? Beef cow slaughter is down nearly 10 percent for the year to date compared to last year and is down 12 percent compared to 2010. Would cow slaughter have been even lower without drought this year; probably, but it is not clear how much.

Regional impacts are even more difficult to estimate. The drought covers several federal slaughter regions and some are not reported individually so it is not easy to identify regional impacts. For Region 6, the Southern Plains areas that was so impacted in the 2011 drought, beef cow slaughter for the year to date is down 22 percent and is down 32 percent in the last 6 weeks. Beef cow slaughter in Regions 6 will show even larger week to week decreases in the next several weeks due to the very large values in July and August last year. Nevertheless, these decreases may be masking some drought impact this year. Beef cow slaughter in the Southern Plains is significantly reduced this year in part because the drought is not as severe across the region as last year and also because there is simply less cows to liquidate. There are undoubtedly some drought impacts in this region this year but it is impossible to isolate those impacts at this time.

The beef replacement heifer number in the mid-year report likewise may be helpful though not necessarily. If the reported heifer inventory is down, it will ensure additional herd liquidation this year. If the heifer inventory is above last year, it may only mean that producers have not yet been forced to sell heifers due to the drought but heifer liquidation may yet occur. In any event, the heifer inventory is different than the number of heifers that actually enter the herd and that can change significantly depending on the drought. My own estimates at this point suggest that a January 1, 2013 beef cow herd inventory down 1.25-1.5 percent from 2012 is consistent with current cow slaughter data and heifer retention indications. The decrease could easily be bigger, especially if the drought persists and while it could be smaller, the conditions that would support a smaller herd decrease in 2012 are diminishing daily.

Heat Stress Can Reduce Pregnancy Rates

Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

The effects of heat stress on reproductive performance of beef cows has been discussed by many animal scientists in a variety of ways. After reviewing the scientific literature available up to 1979, one scientist (Christenson, R.K. 1980, J. Anim. Sci. 51: Suppl II: 53.) wrote that the most serious seasonal variation in reproductive performance was associated with high ambient temperatures and humidity. He further pointed out that pregnancy rates and subsequent calving rates of 10 to 25% were common cows bred in July through September.

Typical Oklahoma summer weather can fit the description of potential heat stress, where many days in a row can exceed 95 degrees and night time lows are often close to 80 degrees. Many hours of the day can be quite hot and cause the slightest rise in body temperature of cattle. Research conducted several years ago at OSU illustrated the possible impact of heat stress of beef cows on their reproductive capability. These cows were exposed to bulls as one group (while in a thermo-neutral environment) and one week later exposed to the environmental treatments listed below in Table 1.

Table 1. Effects of Imposed Heat Stress on Reproduction in Beef Cows
([Biggers, 1986; OSU](#))

Treatment group	Control	Moderate Stress	Severe Stress
Daytime temp (F)	71	97	98
Nighttime temp (F)	71	91	91
Relative Humidity %	25	27	40
Rectal temp (F)	102.0	102.7	103.6
Pregnancy %	83	64	50
Conceptus Weight (g)	0.158	0.111	0.073

They found that heat stress of beef cows from day 8 through 16 affected the weights of the conceptus (embryo, fluids, and membranes) and the increased body temperature may have formed an unfavorable environment for embryo survival. As noted in table 1, the percentage of pregnancies maintained throughout the week of severe heat stress was considerably reduced.

Florida scientists studying dairy cows reported that for high conception rates the temperature at insemination and the day after insemination was critical to success. They stated that the optimal temperature range was between 50 degrees F. and 73 degrees F. Declines in conception occurred when temperatures rose above this range.

Extremely hot days and warm nights in the Southern Plains will cause core body temperatures of range cows to elevate. This data suggests that producers should make every effort to establish their breeding seasons when the temperatures are more in a thermal neutral range. Also remember that bull fertility is affected by heat stress. Fall calving (with breeding seasons beginning in late November and ending in January) allow for fertilization and early embryonic survival when heat stress is not a factor.

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