Eager to Get Grass: Be Careful With Your Heifers

Allen Bridges, University of Minnesota

Spring is here! To steal a saying recently seen at a greenhouse: 'I am so excited for spring, I wet my plants!' For cattlemen, spring means cows can get to green grass. Be cautious moving heifers to pastures at the wrong time; recent research demonstrated if the transition to pasture happens at an inappropriate time, pregnancy rates can suffer.

Many producers have spent the long winter developing replacement heifers in dry-lots, not feeding 'hot' feedlot rations, but rather feeding forage-based diets to target appropriate weight gains to maximize reproductive potential once the breeding season begins this spring. Careful attention has been paid to feed delivery and heifer growth since weaning. Producers have been anxiously waiting for grass to green up so they can send cows to pasture and begin the breeding season. Recent research from South Dakota State University, the University of Wyoming, Purdue University, and University of Minnesota, demonstrated that if the transition from the dry-lot to grass pasture in beef heifers corresponds with the initiation of the breeding season, especially if done immediately after AI, pregnancy rates can suffer due to this shift in nutrition.

For those producers who AI in the spring, estrous is often synchronized and conducted while in the dry-lot to better facilitate labor, animal handling, and protocol implementation. Immediately following AI, heifers are often moved to pastures to expose them to cleanup bulls and take advantage of lush spring forage. Such an immediate change in nutrition, however, appears to negatively impact metabolism, body weight gains, and reproductive efficiency in these heifers. South Dakota research demonstrated that transition from the dry-lot to spring pastures resulted in considerable weight loss in the first week on grass, greater than 3 lbs/day; and weight gain was reduced for almost 30 days after introduction to pastures. This weight loss is likely due to factors such as: 1) spring grass is lush but full of water; 2) heifers may not be able to eat enough DM; and 3) the rumen may need to adapt to the new diet. Also, behavioral changes occur in heifers. Like any animal in a new environment, there is a stress associated with change. Heifers spend less time eating and more time walking the fence line, thus, feed intake goes down. All of these factors result in weight loss and changes in some metabolic hormones.

A change in environment and diet, combined with increased activity and weight loss results in a stressed heifer. As expected, this does not lend itself to good pregnancy rates. It was recently demonstrated that a shift in diet at AI has immediate impacts on embryo health and development. Heifers that received insufficient energy after AI had poor quality embryos that were less developed within six days after AI and diet switch. More importantly, several studies have recently demonstrated that if heifers do not maintain continued body weight gains following AI, and either gain no weight or lose weight, AI pregnancy rates are considerably reduced. Combined, these studies suggest that when heifers fail to receive adequate nutrition to maintain positive growth following AI, pregnancy success to AI is reduced by approximately 10 percentage points. This is significant given the time, money, and resources put in to developing heifers and getting them pregnant early in the breeding season.

How can the decrease in pregnancy success associated with the dry-lot to pasture transition be avoided? One approach is to get heifers on pasture prior to the start of the breeding season allowing them to adapt to the new diet and environment prior to breeding. However, this may not be feasible due to environment and timing. A second option is to supplement with an energy dense feed. Research demonstrated that providing heifers with 5 lbs/head/day of dried distillers grains for the first 30 days after moving to pasture prevents a decrease in AI pregnancy rates when the transition from the dry-lot to pasture happens immediately after AI. Although this increase is costly, preventing a loss in reproductive performance is critical and worth the investment. Additional research is needed to determine how long this supplementation needs to be in order to prevent a decrease in pregnancy success.

In summary, beef heifers developed in dry-lots, although receiving primarily a forage-based diet during development, experience considerable weight loss when introduced to spring pastures. This abrupt nutrition change immediately following AI results in a reduction of AI pregnancy rates. Producers should not let mismanagement at the start of the breeding season negatively impact reproductive efficiency in their herds.