Enchantress of the Paddock: A Cautionary Tale of Love, Lust & Too Much of a Good Thing

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A tremendous amount of effort is put into preparing breeding-age cattle for the breeding season by most operators. One of the greatest parts of the spring season is the green grass coming just around the corner. For many, this indicates a move away from feeding cows and heifers stored feedstuffs in dry lots to lush spring pastures. Although this is very much a positive for almost any cow-calf outfit, farmers should be cautious with moving cows and heifers (especially heifers) out to grass at a time very sensitive to the reproductive cycle in cattle. Research has demonstrated the transition from winter feed to grass can create a multitude of stressors that can have a very negative impact on pregnancy rates.

Most farmers have been developing replacement heifers in dry lots since last fall, trying to get them in shape for breeding by feeding mostly forage-based diets. Their goal: weight gains maximizing reproductive potential once the breeding season begins. Once spring rolls around and the grass starts to green-up, the desire to get cows and heifers out of the mud in the dry lot and onto green grass is strong because we feel it is better for the cows. Unfortunately, the transition from the dry lot to grass pasture tends to correspond with the start of the breeding season; especially if done immediately after artificial insemination (AI). Many times pregnancy rates suffer due to this rapid shift in nutrition.

This situation is especially prevalent for those farmers using AI in the spring. Estrus synch protocols require multiple trips through the chute and dry lots and generally 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 be negatively impacting metabolism, body weight gains, and reproductive efficiency in these heifers. The transition from the dry lot to spring pastures tends to result in considerable weight loss in the first week on grass, often times >3 lbs/day; and overall weight gain can be delayed for as much as 30 days after turnout to grass. This weight loss is likely due to numerous factors: spring grass is lush but full of water and heifers may not be able to eat enough dry matter, their rumen may need to adapt to the new diet, and behavior changes as heifers spend less time eating and more time walking the fence line. All of these factors result in weight loss and changes in metabolic hormones.

The weight loss experienced as a culmination of these factors signals the thousands of years of environmental adaptation and selection in cattle to terminate the pregnancy because conditions are not advantageous for survival. Thus, the stress associated with rapid diet changes at breeding time does not lend itself to good pregnancy rates. Research has demonstrated a diet shift at breeding has immediate impacts on embryo health and development. Heifers receiving insufficient energy after AI had poor quality embryos that were less developed within six days after the diet switch. More importantly, several studies have demonstrated if heifers do not continue gaining body weight following conception, pregnancy rates are considerably reduced by at least 10%. Furthermore, this doesn't even take into consideration the number of females late-bred as a result of losing one or more pregnancies to nutritional stress early in the breeding season.

So the main question for farmers is how to avoid this decrease in pregnancy success associated with the transition from the dry lot to pasture. One approach is to get heifers on pasture prior to the start of the breeding season. This allows the heifers to adapt to the new diet and environment prior to the start of breeding. For many farmers, however, this may not be feasible due to environment and timing of the breeding season. A second option is to supplement heifers with an energy-dense feed once placed on pastures. Research has

demonstrated providing heifers with 5 lbs/head/day of dried distiller's grains for the first 30 days after moving to pasture prevents a decrease in pregnancy rates when the transition from the dry lot to pasture happened at or immediately after the start of the breeding season. Although this may increase costs, preventing a loss in reproductive performance is critical and worth the investment. Additional research is needed to determine how long this period of supplementation needs to be in order to prevent a decrease in pregnancy success.

In summary, breeding-age females wintered and developed in dry lots on a primarily forage-based diet will likely experience considerable weight loss when introduced to pastures in the spring. This abrupt change in nutrition immediately following turnout results in a reduction of pregnancy rates. You spend considerable time, money, and effort to properly develop heifers up to the breeding season. Don't let mismanagement at the start of the breeding season negatively impact reproductive efficiency in your herd.