

Connecting with Cattle

More Relaxed Animals = Improved Reproductive Efficiency

Reducing animal stress seems to be the key to improving reproductive efficiency according to preliminary results from the Heifer Acclimation Project being carried out by Olds College at the Neilson Cattle Development. Researcher Dr. Désirée Gellatly is gathering her second year of data on the project to confirm increased handling acclimation, positive reinforcement and feed rewards keep cattle calmer and therefore improve reproductive performance – and the results are promising.

“The primary goal of a cow-calf operation is to produce one calf per cow a year. I commonly hear from beef producers that by increasing the frequency of handling, animals will be more stressed. However, studies have been showing that calmly and gently handling cattle more regularly can minimize the animal’s stress and anxiety during routine management procedures,” explains Désirée Gellatly, PhD, Research Scientist - Technology Access Centre for Livestock Production (TACLP).



The TACLP is performing a replicate study this year using new heifers in order to increase the total number of animals assessed to improve statistical results. The research team is comparing two groups of heifers; one group is subjected to handling acclimation procedures before the start of breeding season and the other group is a control group that is not acclimated. The project evaluates three success factors in the heifers: reproductive performance, reactivity at handling and physiological indicators of stress.

The heifers are acclimated to handling by using a combination of two methods: 1) they are offered a small additional feed supplement in the feedlot pen (approximately 100 grams per heifer) and 2) they are run through the chute on three separate days with feed rewards immediately after handling (positive reinforcement). By performing these two acclimation methods, their stress levels remain low and the heifers have an increased chance of reproducing. The control group is fed by feed truck without any human interaction, and are not exposed to handling acclimation procedures prior to breeding.

Based on preliminary results, acclimated heifers had lower concentration of salivary cortisol which indicates they were less stressed during and after the breeding season and had a numerical greater pregnancy rate when compared to the non-acclimated group. Désirée wants to ensure the livestock industry and producers are aware of and can benefit from the project outcomes when the studies are complete.

Désirée has been completing the study using heifers at Neilson Cattle Development near Stettler, Alta. After speaking with Lance Neilson from Neilson Cattle Development, it's evident the acclimation process has been positive for every involved party: researchers, farmers and cattle. He says there are multiple benefits from acclimating cattle and plans to continue acclimation techniques for all his cattle moving forward.

Lance says the improved fertility rate speaks for itself — but highlighted how acclimated heifers had less hesitation coming into the calving barn which made the entire calving process run smoother from the operational side of things. He explained the acclimated heifers, even particular cows that have always been more excitable, were calmer than other mature cows who have gone through numerous calving seasons.

Lance is convinced heifer acclimation is beneficial from many angles. He explained that after raising a cow all year at an approximate cost of \$700 per year, it's a financial hit if that cow doesn't produce offspring. Providing the heifers good experiences during the handling system keeps them relaxed and appears

to improve fertility rates. “This is also good news for sustainability and climate change — less resources are required to produce a pound of beef with improved fertility. It's good news across the industry in general.”

Lance didn't hesitate when asked if he would continue doing the acclimation process to future cows — even with the extra time and work the acclimation methods require — due to the benefits of fertility rates and calmness of the cattle. He is planning to adopt the handling acclimation procedures as part of a standard protocol during the breeding services offered to his customers.

Neilson Cattle Development was happy to partner with Olds College for this research project; Lance and his wife, Karyn, met when they were attending the College together. They were married only a few days after their graduation in 2001 and now have four children together along with their booming cattle business — and their oldest will be graduating high school next year and is planning on applying to Olds College.

Olds College is eager to compile the data from two seasons of research on these acclimation techniques. Besides the replicate study using new heifers, the College is also studying the same heifers from last year's study — cows going to their second calving — to see if the acclimation procedures need to be repeated every year or not.

The expected results of this study will provide recommended acclimation practices to increase reproductive efficiency, improve overall animal welfare, and increase the profitability and sustainability of cow-calf operations. Follow Neilson Cattle Development on Facebook @neilsoncattledvelopment to see how the acclimation process goes for this Olds College alumni family.

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