



Influence of weaning strategy on animal welfare in beef calves

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Abstract

Alternative strategies can affect the amount of stress that calves encounter at weaning. The strategies being evaluated in this study are fenceline, two-stage, and traditional abrupt. Fenceline weaning involves placing the calves in a pasture adjacent to their cows so they can have contact with each other through the fence. Two-stage weaning utilizes anti-suckling devices that clip into the calves noses and prevent them from suckling their cows. The calves remain with the cows for a short amount of time, then they are weaned and separated from their cows. This allows the stressors of weaning to be faced in two stages. The traditional abrupt weaning is accomplished by separating the calves from the cows and placing them in separate pastures where they have no contact.

Objective

The objective of this study was to determine if the stress that calves encounter during weaning can be reduced by utilizing alternative methods of weaning.

Introduction

Beef cattle producers generally wean their calves by abruptly separating the calves from their cows and placing them in pastures where they have no contact with each other. This causes problems for the calves because they are forced to cease suckling, and change to a completely solid diet. This in conjunction with a change in environment causes the calves to experience unwanted stress. The high levels of stress encountered at weaning cause the calves to spend more time vocalizing, pacing, and searching the pasture and less time eating, drinking, and resting. This stress can also contribute to a compromised immune system and higher disease susceptibility. Stressed and unhealthy calves gain less resulting in lower body weights and less money to the producers when the calves are sold.

Materials and Methods

Cows and calves were assigned to treatment groups based on calf body weight and cow parity. Four days prior to weaning, one group of calves ($n = 13$) was fitted with an anti-suckling device (two-stage, A) while remaining with the herd. At weaning, devices were removed and six of the calves were placed in a pasture adjacent to their cows (fenceline, F) and seven were moved to a remote location (abrupt, A). The calves not fitted with an anti-suckling device (N) prior to weaning were placed in a pasture adjacent to their cows ($n = 7$) or moved to a remote location ($n = 6$). Cows and calves were weighed on d -4, 0, and 28. Body condition scores (BCS) were evaluated on cows d -4, 14, and 28. Blood samples were collected on all cows and calves on d -4, 0 and 4 and sent to a commercial diagnostic lab to measure lymphocytes and neutrophils. Data was analyzed using SAS® with proc mixed using repeated measures through time and including the effects of the treatment together with an interaction term.

Results

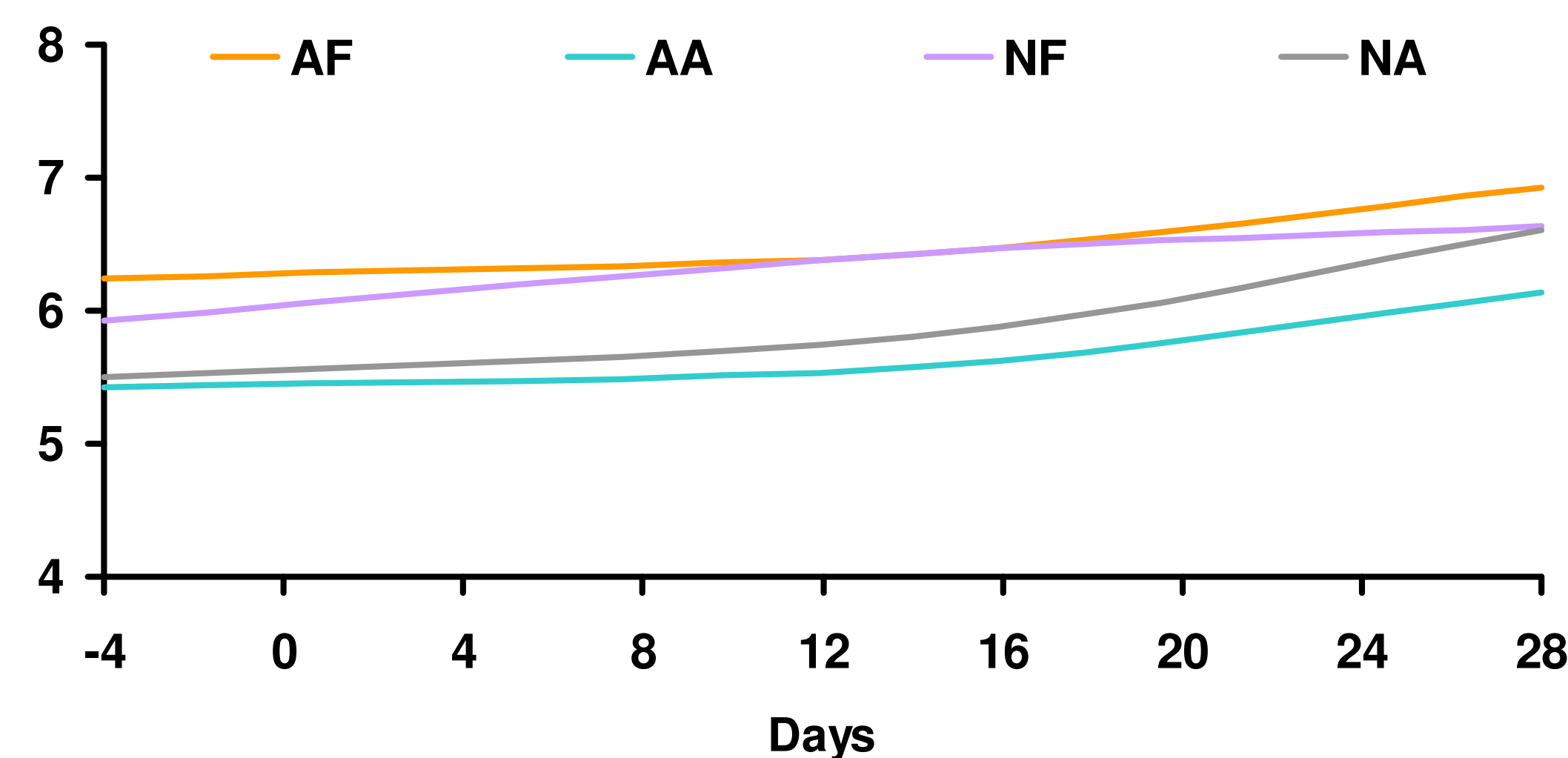


Figure 1. Cow Body Condition Score at day -4, 14, and 28. No treatment effect ($P = 0.43$).

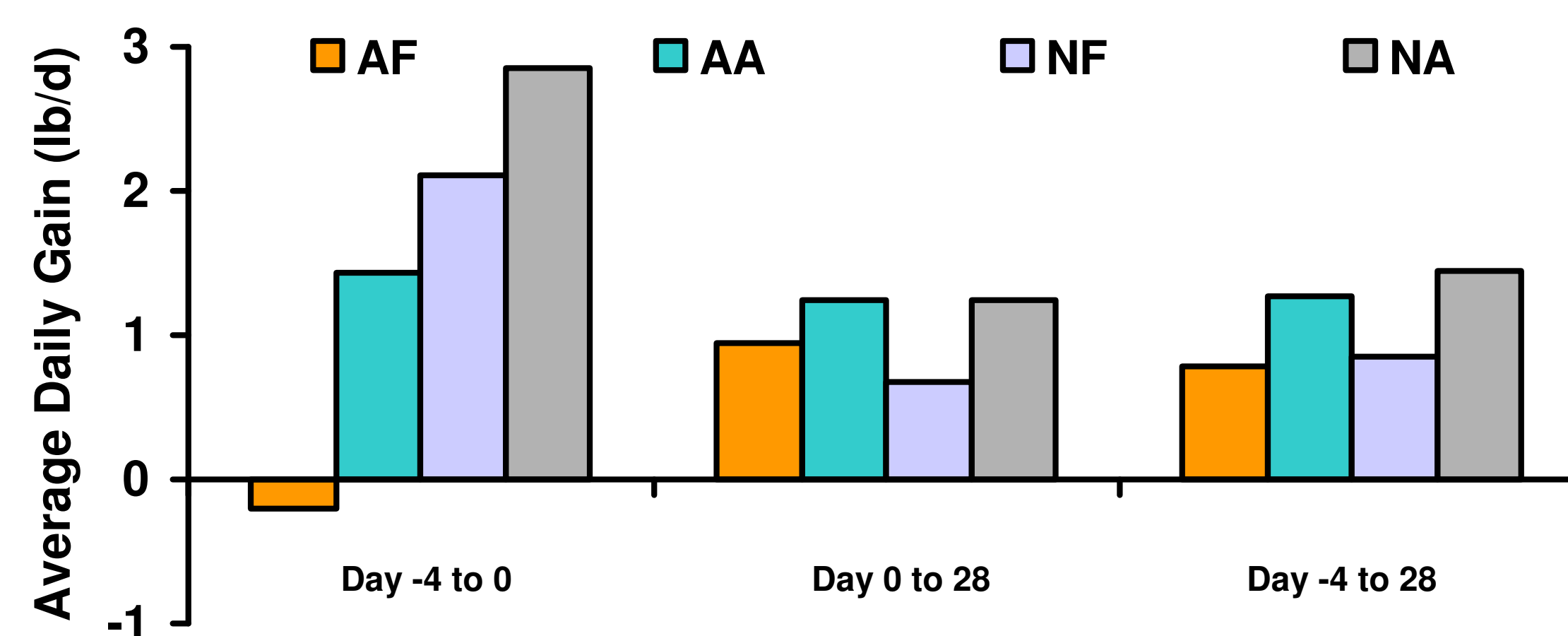


Figure 2. Cow average daily gain.



Anti-suckle devices fitted on calves



Fenceline weaned calves

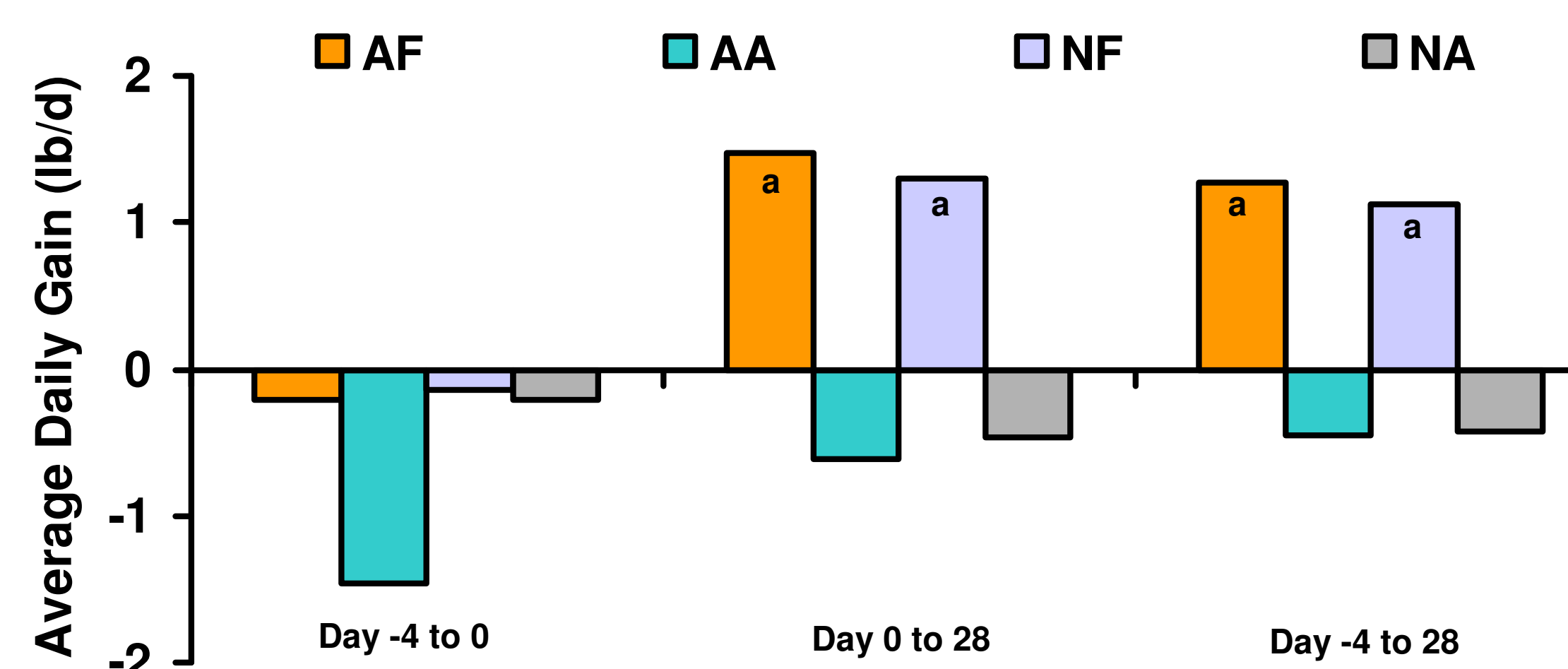


Figure 3. Calf average daily gain.

- No treatment differences were observed for cow lymphocyte or neutrophils
- No treatment differences were observed for calf lymphocyte or neutrophils

Summary

- No difference in cow body condition score between treatments
- No difference in cow average daily gain between treatment groups
- Calves that were fenceline weaned had higher average daily gains
- No difference in neutrophils or lymphocytes for cows or calves

Conclusion

Results suggest that two-stage combined with fenceline weaning may be a less stressful alternative as compared to traditional weaning strategies that will result in more pounds of product to market.

Implications

Calves that are maintained at low stress levels have higher average daily gains. If producers utilize these alternative methods of weaning, they have more pounds of product when it comes time to market their animals. Additional research is needed which will increase sample size.

Acknowledgments

- Stephen F. Austin State University Beef Center
- Andrea Loyd
- Mark Ethridge
- Ward Animal Hospital
- Office of Research and Sponsored Programs
- Dr. Tom Welsh, Department of Animal Science, Texas A&M University

