January 2017 AG/Beef/2017-01pr

Weaning Strategies in Beef Cattle to Reduce Stress

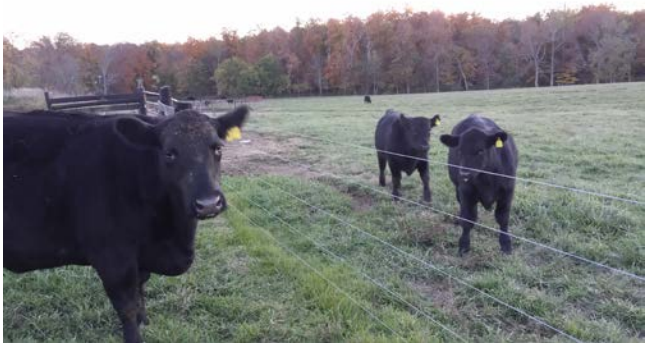
Dr. Matthew Garcia, Beef Specialist
Dr. Kerry Rood, Extension Veterinarian
Clark Israelsen, Agriculture Agent

Introduction

Weaning is considered one of the most stressful periods in the beef production system for beef calves. During this process calves are subjected to a variety of stressors including removal from their mothers, new diets, processing (vaccination, dehorning, castration etc.), and possibly even new pen or pasture environments. These stressors, singly or in combination, can result in behavior or physiological distress in calves (Lay et al., 1998) including increased vocalization (Siegford et al., 2007) and a suppression of the calves' immune response (Lynch et al., 2010) leading to sickness. While the process of weaning is always stressful on the calf, a producer can utilize different weaning methods to possibly reduce the impact of weaning stress. Calf stress can be minimized by implementing strategies that incorporate slow changes in diet, separation and take advantage of environmental familiarity. This fact sheet will evaluate the advantages and disadvantages of two commonly applied low-stress weaning methods.

Fenceline Weaning

Fenceline weaning is a process that aims to take advantage of environmental familiarity and close proximity to the calves' mothers. Cows and calves are kept in the same pasture, but are separated by a fence that prevents nursing, while allowing the calf to have visual contact with its mother. This method reduces stress for both cow and calf because it allows for visual contact and close proximity vocalization.



www.ohiobeef.org/beef-bytes/a-part-of-life-weaning

Advantages

Previous studies (Price et al., 2003) have reported that fence-line weaning reduces calf stress while improving weight gain when compared to abrupt weaning strategies. These results were attributed to the fact that the calves were in a familiar environment and within eyesight and earshot of their mothers. As a result, calves spent more time eating, less time laying down and gained 50% more weight than calves that were abruptly weaned. Calves weaned with this method have also been shown to retain more weight 10 weeks' post weaning (~30lbs) when compared to calves that were abruptly weaned (Price et al., 2003) and had

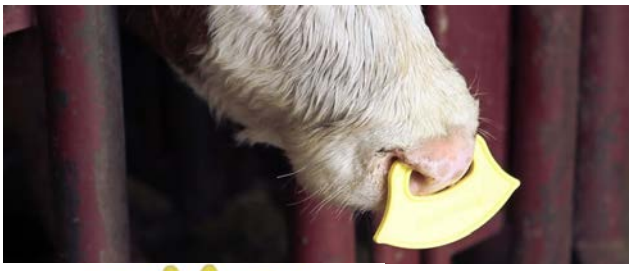
less stress factors that could be detected with bloodwork (Buskirk et al., 2007).

Disadvantages

Although the benefits of this system are well documented to reduce stress on the calves there are still some disadvantages. The first is that the producer must have good fences to keep the calves and cows apart. This may include building or maintaining a pasture fence for this process which means increased inputs and labor for the weaning process. Second, if a calf does get through the fence, it must be caught and returned to the weaning pasture. This process will obviously result in increased stress for the calf and requires the producer to modify or fix fencing to complete the weaning process.

Two-Step Weaning

The two step weaning process, also referred to as quiet weaning, is a weaning strategy in which the calf first stops nursing and then is separated from the cow. Specifically, a plastic nose flap is inserted into the calf's nose for a short period of time before separation from the cow. The nose flap prevents the calf from nursing on the cow but does not inhibit the calf from grazing or drinking water. Thus, the calf remains in the same pasture with its mother and is slowly acclimated to a new diet without the stress of full separation from its mother.



www.quietwean.com
https://www.valleyvet.com/ct_detail.html?pgguid=e8d5f96c-4043-4f11-8566-1ba6469641cc

Advantages

This method allows the calf to remain in a familiar environment and not endure the stress of separation from the cow. Producers can use the nose flaps in multiple years and the placement and removal of the nose flaps can coincide with a pre-weaning vaccination program to not increase the number of times the calf is handled. Furthermore, the benefits of using this method have been documented in previous studies that have reported significantly less vocalization, less time laying down, more time eating and more time resting after complete separation from cows when compared to calves that were abruptly weaned (Haley et al., 2005). However, average daily gain pre- and post-weaning was not significantly different from abruptly weaned calves (Haley et al., 2005).

Disadvantages

While the benefits of utilizing this weaning method have been documented there are a few drawbacks that must be addressed. The first is that the animal must be handled multiple times to place and remove the nose flap, which may lead to undo stress if not coordinated with other processes that require handling the calf. The second disadvantage is that the producer has to buy and replace broken or lost nose flaps every year as inevitably there will be a percentage that are not re-usable. Finally, if the nose flap comes off during the weaning process that calf must be handled to replace the nose flap or separated in order to be weaned, causing an increased amount of stress to the calf.

Summary

While both weaning methods have great potential to reduce stress and increase short-term performance in the calf during the weaning process, the application of both methods warrant some considerations. While both methods have been documented to be effective they may not be applicable to all producers. The effectiveness and utility of each method is going to be specific to each producer, their resources and how they intend to market their calf crop after weaning.

References Cited

[1] Haley, D.B., D.W. Bailey, and J.M. Stookey. 2005. The effects of weaning beef calves in two

stages on their behavior and growth rate. J. Anim Sci. 83:2205-2214

[2] Lay, Jr, D.C., T.H., Friend, R.D. Randel, C.L. Bowers, K.K. Grissom, D.A. Neuendorff and O.C. Jenkins. 1998 Effects of restricted nursing on physiological and behavioral reactions of Brahman calves to subsequent restrain and weaning. Appl. Anim. Behav. Sci. 56:109:119

[3] Lynch, E.M., B.Early, M. McGee, and S. Doyle. 2010. Effect of abrupt weaning at housing on leukocyte distribution, functional activity of neutrophils, and acute phase protein response in beef calves. BMC Vet. Res. 6(1):39-47. Doi:10.1186/.1746-6148-6-39

[4] Price, E.O., J.E. Harris, R.E. Borgwardt, M.L. Sween, J.M. Connor. 2003. Fenceline contact of beef calves with their dams at weaning reduced the negative effects of separation on behavior and growth rate. J Anim Sci 81: 116-121.

[5] Buskirk, D.D., J.M. Siegford, and B.A. Werner. 2007. Performance of beef calves weaned by traditional fenceline and two-step method. J. Anim. Sci. Vol 85, Supl. 1/J Dairy Sci. Vol. 90.

[6] Siegford, J.M., D. D. Buskirk, and M. K. Sharra. 2007.Behavior of beef calves weaned by traditional, fenceline and two-step methods. J. Anim. Sci. Vol. 85, Suppl. 1/J.

Photo Credits

1. Fence-line weaning www.ohiobeef.org/beef-bytes/a-part-of-life-weaning Accessed October 9 2016
2. Two stage weaning www.quietwean.com Accessed October 9
3. Weaning nose clip https://www.valleyvet.com/ct_detail.html?pgguid=e8d5f96c-4043-4f11-8566-1ba6469641cc