



DAIRYINFO

W-S Feed & Supplies, Ltd.
1805 Sawmill Road
Conestogo, ON N0B 1N0
Canada
1.800.265.2203
www.wsfeeds.ca

Taking service to another level!

UNDERSTANDING COW BEHAVIOR FROM A NUTRITIONAL PERSPECTIVE (3)

FEED BUNK DESIGN

One of the objectives of cattle housing is to provide a comfortable environment that will allow cows to meet their behavioral and physiological needs (Phillips, 2001). There are several aspects of the feeding environment that have the potential to influence the ability of cows to access feed, including the amount of available feed bunk space/animal and the physical design of the feeding area. Reduced space availability has been shown to result in increased aggressive behavior in cattle (Kondo et al., 1989). When feed bunk space is limited, increases in aggressive behavior are thought to limit the ability of some cows to access feed at times when feeding motivation is high, particularly after the delivery of fresh feed. In a recent study, we set out to determine if increased space availability at the feed bunk (40 vs. 20 inches/cow) improves access to feed and reduces social competition (DeVries et al., 2004). When cows had access to more feed bunk space, there was at least 60% more space between animals and 57% fewer aggressive interactions while feeding. These changes in spacing and aggressive behavior allowed cows to increase feeding activity throughout the day. The increase in feeding activity was especially noticeable during the 90 minutes after fresh feed was provided. During this period, cows at the 40 inches/cow stocking density increased their time at the feeder by 24%, and this effect was strongest for subordinate animals. In addition to the amount of available feed bunk space, the physical design of the feeding area can influence feeding behavior. One of the most obvious features of the feeding area is the physical barrier that separates the cow and the feed. Feed barriers are all designed with the intention of allowing cows equal access to feed; however, some designs can limit the cows' ability to freely access feed and increase the frequency of aggressive interactions at the feed bunk. Many producers believe that a feed line barrier that provides some sort of separation between cows (e.g. headlocks) will reduce competition and improve feed access. To test this hypothesis, an experiment comparing a post-and-rail vs. a headlock feed line barrier on the feeding and social behavior of dairy cows was completed (Endres et al., 2005).

Average daily feeding time did not differ when cows had access to feed via headlocks (271.7 ± 3.8 minutes/day) compared to the post and rail barrier (277.8 ± 3.8 minutes/day). However, during periods of peak feeding activity (90 minutes after fresh feed delivery), cows that had lower feeding times relative to group mates when using the post-and-rail barrier showed more similar feeding times to group mates when using the headlock barrier. There were also 21% fewer displacements at the feed bunk when cows accessed feed by the headlock barrier compared to the post-and-rail barrier. **These results suggest that using a headlock barrier reduces aggression at the feed bunk and improves access to**

feed for socially subordinate cows during peak feeding periods. To determine how the amount of available feed bunk space and the physical design of the feeding area interact with one another, we followed up on our previous studies with a trial that examined how stocking density at the feed bunk affects the feeding and social behavior of dairy cows and if this was also affected by the type of feed barrier used (Huzzey et al., 2006). Although daily feeding times were higher and the duration of inactive standing in the feeding area was lower when using a post-and-rail compared to a headlock feed barrier, a significant reduction in aggressive behavior with the headlock barrier compared to the post-and-rail barrier was noted. As well, regardless of barrier type, feeding time decreased and inactive standing increased as stocking density at the feed bunk increased. Cows were displaced more often from the feeding area when the stocking density was increased, and this effect was greater for cows using the post-and-rail feed barrier. Further, it was found that subordinate cows were displaced more often with the post-and-rail barrier design, particularly at high stocking densities. From these results, we can conclude that overstocking the feed bunk will decrease time spent at the feed bunk and increase competition, resulting in poor feed access. Further, the use of a barrier that provides some physical separation between adjacent cows, such as a headlock feed barrier, can be used to further reduce competition at the feed bunk. A less aggressive environment at the feed bunk may also have long term health benefits, as it has been suggested that cows engaged in a high number of aggressive interactions at the feed bunk may be at risk for hoof health problems (Leonard et al., 1998). Based on these results, we could conclude that the provision of more feed bunk space, particularly when combined with feed stalls, will improve access to feed and reduce competition at the feed bunk, particularly for subordinate cows. This could help reduce the between-cow variation in the composition of ration consumed by preventing subordinate cows from being forced to access the bunk only after dominant cows have sorted the feed (Hosseinkhani et al., 2008).

This composite provides us with a basic understanding of how feed bunk management and design can be manipulated to reduce competition, improve feed access, and reduce between-cow variation in composition of feed consumed. It also provides us with clear implications as to the impact these things have on health, dry matter intake (DMI), productivity and bottom-line profitability.

(Edited from an article by DeVries/Keyserlingk, Un of British Columbia)

Interested in discussing topics in this newsletter, or want to do a better job feeding and managing your cows? Call me!
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RENAISSANCE... SOLUTIONS & RESULTS
THE TEAM FOR SUCCESS!

PLANNING FOR WINTER...

As the temperatures begin to drop it is important to ensure your calves are getting the energy and nutrition they need to maintain body temperature and growth. One way to help ensure demands are met is to increase the amount of MILK REPLACER they consume each day, along with a quality calf starter. Ask us about working with you to calculate the needs of your calves as temperatures decline this fall and winter. A proactive management approach can have a positive impact on your calves now... and in the future. Call us today for details and products!

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START 'EM FOR RESULTS!
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Around the farm ~

As fall weather begins to become the norm (for now) and the harvest moves toward completion in most areas, getting ahead of a few chores becomes more and more pertinent. Once the cold of winter is upon us, it is increasingly difficult to accomplish some of these things. Cleaning the barn is not the most desired job around most farms any time of the year! However, it is a very important job. A regularly scheduled cleaning routine can have an impact on cow comfort and herd health, as well as keeping the environment healthier for everyone working on the farm. It can also help in maintaining some of the equipment, which can become clogged with dust and dirt – or even freeze up in winter time. When reviewing your cleaning routine and protocols, it is very important to remember that equipment used for cleaning purposes is never to be used for mixing feed, moving feed, or cleaning feed areas. Many infectious diseases are transmitted by using “shared” equipment. Cleaning equipment should be hosed down and disinfected on a regular basis. It is important to maintain a regime for cleaning waterers, which can harbor numerous pathogens. Write down and post cleaning protocols and expectations, so everyone follows these requirements as directed. Reduce health concerns and maximize cow comfort with a clean barn, clean feeding area, clean water (and waterers), and separate equipment. Make a difference before it becomes a concern.

***Understanding Cow Behavior – a Nutritional Perspective
Planning for Winter...
Around the farm ~***

***OCTOBER 2017
CHECK IT OUT!***