

Northwest Veterinary Associates Newsletter

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Are We Providing Enough Bunk Space?

Overcrowding of lactating dairy cattle is intuitively something that should be avoided; yet it is alarming at how much it does occur. USDA numbers in 2010 showed 43% of farms provided less than one stall per cow. If one looks at just farms in the northeast, where the six-row freestall barn is quite prevalent, these numbers may be considerably worse. When starting a conversation about overcrowding, most in the industry speak in terms of cows per stalls. I would like to take a look at the overstocking issue from another angle, that is, in terms of manger, or bunk space.

Normal feeding behavior is quite similar for both housed and pastured cattle, with a dramatic increase in the number of animals feeding either at the feed alley immediately following the delivery of fresh feed, or at turn-out to pasture following milking. Smaller meals are taken during the course of the day, with a total feeding time of around 5 hours, for confined cattle. Cows are allelomimetic, that is they prefer to feed together, and they are crepuscular, preferring to feed early in the morning and early evening. Feeding dairy cows within these parameters should benefit productivity through promoting increased dry matter intake (DMI).

While feeding cows twice vs. once daily may enable cows to more evenly distribute their feeding time over the course of the day, the amount of bunk space provided and a cow's position within the social dominance hierarchy may influence whether cows are able to gain access to feed at the times they want to eat. Grant and Albright (2001) suggested that accessibility of feed may be more important than the actual amount of nutrients provided and that feed intake and milk production will generally improve when cows are allowed access to feed when they want to eat. There are a number of situations where cows may be limited in their access to feed, including barn design issues (two vs. three row barns), and a cow's tendency to want to eat at the time of feed delivery.

In contrast to findings from earlier studies, more recent research suggests that overcrowding at the feed bunk may have deleterious effects on cow behavior, some perhaps more than others. Several studies have shown reduced feeding activity, especially around the time of feed delivery, which is when peak feeding activity typically occurs. Conversely, increased feeding activity throughout the day was seen in another study, when bunk space was increased. Cows are also aggressive eaters, by nature and are highly motivated to access freshly delivered feed (DeVries and von Keyserlingk, 2005). When feeding space is inadequate, some, subordinate cows may be prevented from feeding at the time of fresh feed delivery, and consequently, they may be forced to shift their feeding time. Several researchers have shown that cows will sort a TMR, and

that this can lead to feed quality declining throughout the day. Consequently, cows that are forced to delay their feeding time due to overcrowding may consume a poorer quality diet, and these cows may be unable to maintain adequate nutrient intake to maintain high levels of milk production. Furthermore, when cows do not have access to feed when they want to eat, they may overeat following a period of feed deprivation. We refer to this as "slug feeding". This could happen when cows have limited access to feed because of overstocking. Increased feeding competition due to overstocking may reduce intake and increase feeding rate, possibly increasing the risk for metabolic problems such as displaced abomasum and subacute rumen acidosis.

When bunk space is limited some cows are forced to stand and wait for a position at the manger. Studies show that as bunk space was increased, time spent standing inactive at the feeding area decreased. Increased time spent standing inactive in the feeding area may have long-term negative hoof health effects, which could predispose cows to lameness. If we add to this a shortage of stalls, resting time will be compromised and this will certainly add to lameness problems.

It is important to take into consideration that reduced access to feed will most likely impact individual cows within a group in different ways. High-ranking cows may be completely unaffected, while low-ranking cows may struggle to eat when they wish. I believe this to be a situation where the "abnormal becomes normal". The dominant, more aggressive animals remain in the herd, while the poor doers either do not produce to expectation, become lame, or do not breed back and are culled. If we could do a better job matching animal numbers to available bunk space, certainly animal welfare and perhaps long-term farm productivity might actually improve.

Economic affects of overcrowding feed bunks on farm's bottom lines were not obtained for this report, but one can believe that they may be significant. Anything that reduces a cow's DMI will have a negative impact on milk production. Milk is what pays the bills. Subordinate cows either slug feeding or eating the lower quality "leftovers" will be more likely to become unthrifty and ultimately prematurely culled. Decreasing bunk space from 24 to 12 inches has been tied to lower conception rates and a reduction in animals pregnant by 150 days in milk by 50%.

If you take care of your cows, then they will take care of you is an expression that an old client used to say to me. A lot goes into caring for our bovine friends, and providing a minimum of 24 inches per cow of feeding space is something we should add to the growing list of cow needs. This would assure close to 70% of cows access to the feed manger at the same time. If we couple this with feed delivery twice daily, so that fresher feed is available for the majority of the daytime, we can at least come close to meeting her behavioral needs.