VETERINARY NEWSLETTER

UtahState UNIVERSITY extension

Dairy

Logan, UT 84322-4900
Utah State University, Utah Counties and the U.S. Department of Agriculture Cooperating

March 2008

The Utah Veterinary Medical Association
Canyonlands Veterinary Conference
June 12-14, 2008

A good continuing education opportunity in a beautiful area is coming up for Utah veterinarians, including but not limited to dairy and food animal veterinarians. The Utah Veterinary Medical Association Canyonlands Veterinary Conference in Moab, Utah will be held from June 12-14, 2008. The UVMA can be contacted by calling 1-877-882-4862 or electronically at www.uvma.net or uvma@qwest.net. If you have not already received it, I would recommend requesting the brochure that provides conference information including lodging.

Presentations include one by Dr. Warren Hess, State Field Veterinarian, whose presentation will allow attendees to become certified or recertified to participate in the Utah state Johne's Disease/Paratuberculosis control program. This is a convenient way to become certified or to renew certification, and to qualify for the financial incentives to participate in this program.

The following presentations will be during the 10:15 am- noon session on June 13, which is called "UVDL – Case Reports" in the brochure:

Dr. Kimberly Cavender: Malignant Catarrhal Fever: A case in Utah and a review of the disease

Dr. Kerry Rood: Survey and control for the Bovine Viral Diarrhea virus (BVDv) Persistently Infected (PI) animal

Dr. Dave Wilson: Mycoplasma mastitis: statewide prevalence and characteristics of infected dairy herds in Utah

Dr. Jane Kelly: Similarities to African Horse Sickness in a horse with malignant hyperthermia following anesthesia

Dr. Tom Baldwin: Update from the Utah Veterinary Diagnostic Laboratory

I look forward to seeing many dairy and food animal veterinarians at the meeting, along with our colleagues from small animal, equine and other specialties.

How do Headlocks Affect Feed Access for Cows?

As dairy farms have become larger and with more loose housing, especially dry lots/corrals and freestalls, self-locking headlocks have become an increasingly common feature. Except for Murphy's Law that seems to include the phenomenon that if cows are locked up and one is only looking for a few cows to do something, at least one of them will not be locked up and/or have lost her ear tag, they make many aspects of managing or treating cows easier. (According to the 2007 USDA/NAHMS Dairy Study, 37% of the dairy farms in the US house cows in dry lots/corrals or freestalls, while 49% house them in tiestalls or stanchions and 10%

have pastured herds. The fact that these numbers applied across the whole country instead of only the Northeast or Upper Midwest surprised me somewhat. The percentage of cows and of milk production associated with loose housing is undoubtedly higher, but that was not specifically reported).

Whether headlocks or post and rail barriers between dairy cattle and their feed differ in their associations with feeding behavior, total daily time spent eating, and/or Dry Matter Intake (DMI) has been a subject of increasing interest in the dairy industry. A strong relationship has been found between min/day of feeding time and DMI. Therefore most studies focus on time-lapse video photography to measure feeding time with the assumption that DMI will increase also.

I could not find any data regarding how many dairy cattle are fed with headlocks as the barrier to feed, or differentiating between different designs of headlocks. In my experience I would say that there are a lot of cows eating through many different designs of headlocks. Some headlocks are designed or customized by dairy producers or their employees, and some producers have strong opinions that some modification of their headlock designs is better than a "typical" headlock. Several years ago there were experiments with headlock designs that slanted forward at an angle. I used to ask producers what the angle was, and often they did not remember, or maybe did not really care. However, I often heard that cows could get stuck more easily in these, especially if they were startled and pulled their heads back. Those slanted headlocks seem to have become quite uncommon; I mostly see straight up and down ones again.

Comparison of Headlocks and Post and Rail Barriers

The studies looking at differences between post and rail barriers and headlocks do not attempt to characterize differences in design. There is not much scientific basis for deciding on the "best" headlock or post and rail designs, but there is some information comparing one category to the other.

Several papers have been written by the same group of authors, J. Huzzey, T. DeVries, and M. von Keyserlingk at the University of British Columbia, Canada. A study they reported in Journal of Dairy Science in January, 2006 compared 4 different stocking densities of dairy cows and the 2 feed barrier designs. Four groups of 9 cows each were exposed to every treatment combination over time. In addition to linear bunk space per cow of 0.81, 0.61, 0.41 and 0.21 m, respectively, the 4 densities were also reported as 1.33, 1.00, 0.67, and 0.33 headlocks per cow, in other words 4, 3, 2 and 1 headlocks for every 3 cows, respectively, where the headlocks were 0.61 m wide.

Results showed that feeding time per day was directly related to stocking rate; cows ate for significantly more min/day with each decrease in stocking rate. See Figure 1 from the article below. This article was also largely summarized in International Dairy Topics magazine, Vol. 7, No. 1, 2008.

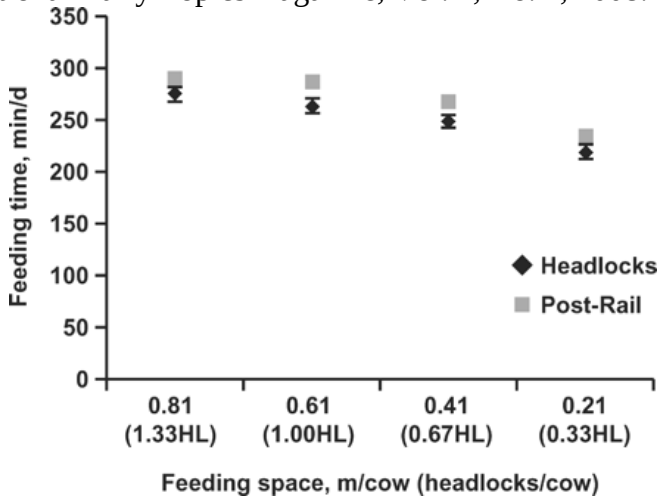

Figure 1. Daily feeding time per cow (mean ± SE) at 4 different stocking density treatments when provided either a headlock or a post-and-rail feed barrier. Data were averaged for the last 4 d of each treatment of 4 groups, each containing 9 cows.

Provision of fresh feed, combined with more bunk space or more headlocks per cow was much more important to increasing the percentage of cows feeding at a given time than were pushing up feed, return from

milking time, or the difference between post and rail or headlock barriers. As might be expected, the importance of stocking density was most important for the first 60 min. after fresh feed was provided. When most of the cows wanted to eat, more bunk space or headlocks per cow was critically important to percentage of cows that could eat, and contributed to the higher overall eating time much more than the type of barrier. See Figure 2 from the article below.

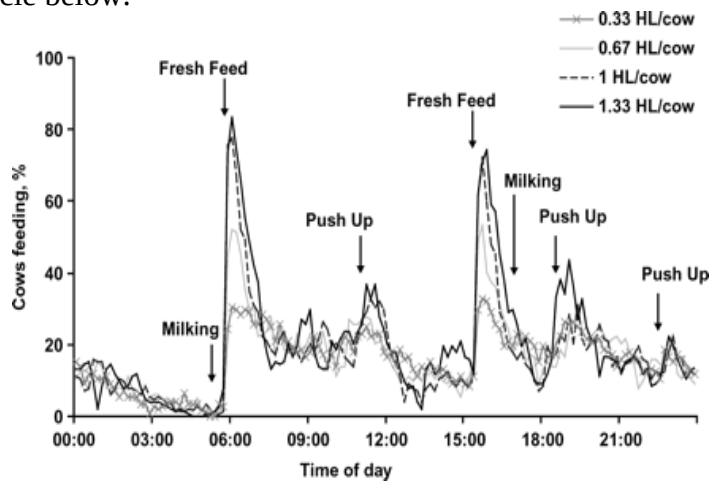

Figure 2. Percentages of cows at the headlock feed barrier during a 24-h period (percentages for each 10-min interval during the day) at 4 different stocking density treatments: 1) 1.33 headlocks (HL)/cow, 2) 1 HL/cow, 3) 0.67 HL/cow, and 4) 0.33 HL/cow. Data were averaged for the last 4 d of each treatment of 4 groups, each containing 9 cows. Because daily pattern of bunk attendance was similar for the post-and-rail barrier, data are not shown. **(Note the importance of fresh feed provision, and at those times the importance of more bunk space or headlocks per cow compared with other factors- DW)**.

Headlocks May Reduce Aggression at the Feed Bunk

There appears to be an interesting social benefit to subordinate cows in a dairy herd with the use of headlocks. Similar to the well-established observation that dairy goats butt each other much less frequently at keyhole feeders where they cannot readily swing their necks and heads at each other, cows at headlocks apparently head butt less frequently.

There was a significant increase in aggressive displacements of cows from the feed bunk with increased stocking density/less available bunk space or headlocks per cow, but there was a highly significant difference between the types of barriers. With increased stocking density, there was a widening protective difference between the barrier types; cows eating through headlocks were less likely to be displaced from the feed bunk by other cows than those eating through posts and rails. See Figure 3 from the paper below.

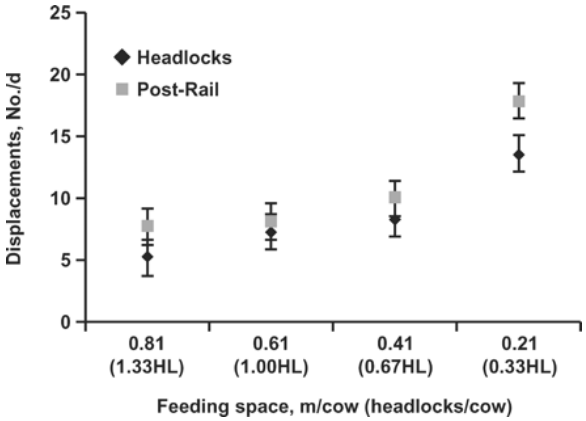

Figure 3. Daily number of displacements per cow (Mean ± SE) at 4 different stocking density treatments when provided either a headlock (HL) or post-and-rail feed barrier. Data were averaged for the last 4 d of each treatment of 4 groups, each containing 9 cows.

I think the authors make an interesting point about subordinate cows. They are the cows most directly affected by overstocking at the feed bunk, eating less feed and probably more sorted feed of poorer quality. Many farms overstock bunk space, including by overcrowding pens. Therefore there may actually be some advantages in terms of animal welfare with headlocks; there certainly do not seem to be disadvantages relative to post and rail. When advising clients on facilities, we do not have to be concerned that there are major animal welfare or production disadvantages with headlocks based on current evidence. Veterinarians and on-farm employees will probably continue to find many management tasks easier, or more likely to be done at all, with headlocks compared to other animal restraint systems.

I like to hear from our readers, including suggestions for future topics of interest. Please contact me at (435) 797-1899 M-W, (435) 797-7120 Th-F or David.Wilson@usu.edu.

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