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Transition Cow Index

On October 1st the Washington State Veterinary Medical Association held its annual meeting in Spokane. The speaker for the food animal section was Dr. Ken Nordlund from the University of Wisconsin and he spoke about a **Transition Cow Index** they developed at Wisconsin. I know transition cow management seems to be an old topic that's been rehashed many times over, but the information Dr. Nordlund shared was actually very revealing.

First of all, they have struggled with monitoring fresh cow success via health records for many years, primarily because every producer defines an event such as Retained Placenta differently and some don't even record health events. So in short, they looked at many herds with health records and determined if a cow has a certain illness it would affect her production for that lactation by a certain amount. For instance, a simple milk fever (MF) alone would only drop projected milk by 500 pounds where a displaced abomasum (DA) dropped milk 1500 pounds. If a cow had MF, a DA, and was lame she would produce 7500 pounds less than she was projected to, etc. This difference from an average is what they call a Transition Cow Index. The index can either be above expected or below expected (as in the examples) depending on amount of fresh cow disease and subsequent production.



Then Dr. Nordlund and his team looked at hundreds of DHIA type monthly records and compared where herds actually were on the Transition Cow Index (TCI) and compared the value to risk factors evaluated in a farm survey and site evaluation. This study evaluated a huge array of variables including facilities, nutrition and feeding, bedding, disease diagnosis and treatments, and other preventive management programs. The five major risk factors affecting TCI are:

FreeStall Dairies

1. **Bunk Space**
2. Freestall Base (comfort)
3. Freestall Size
4. Calving pen moves
5. Screening Methods

Dry Lot Dairies

1. **Bunk Space**
2. Locomotion score, pre-fresh
3. Body Condition Score, Outliers bad
4. Calving pen moves
5. Shade, >45 square feet per cow

Far and away, **Bunk Space** per cow, pre and post fresh was the primary risk factor in determining TCI. Dr. Nordlund recommends, based on their research, cows should have **30 inches of bunk per cow** (4 lockups in 10 feet). The close up and fresh pens should be built at 130 to 140 percent of projected capacity to be sure and never exceed one cow per bunk space during slugs in calving cows. This obviously requires some upfront expense, but when you look at increasing lactations by 5000 pounds and reducing early culls it is paid for very quickly.

Other notes related to these risk factors:

Deep bedding in stalls, as well as bedding depth in corrals (see harrowing article below), had major effects on locomotion scores and associated TCI.

The Screening Methods relates to herdsman cow care. Dr. Nordlund felt this was very underestimated by producers. When herdsman find sick cows early and treated them properly it results in much better TCIs.

The Calving Pen Moves simply means cows should be moved into a close up pen at least one week prior to calving and then allowed to calve in that pen or be moved to a calving boxstall once the calving process begins. The close up ration should be fed for at least 3 weeks, but moving cows just prior to calving had negative effects on dry matter intake and TCI.

Talk to your Veterinarian for further information on Dr. Nordlund's Transition Cow Index.

Fred J Muller, DVM

Are you Harrowing Corrals and Exercise Lots?

Many producers are making the mistake of scraping corrals all year with a box scraper leaving 50-75 percent of the pen as hard pan surface. This may appear to dry better, a good thing, but it limits the amount of area cows have to comfortably lie down. Effectively, the square footage per cow has dropped from 600 sq. ft. per cow to 300 sq. ft. per cow. The result is more cows laying in a smaller area which leads to increased manure and urine in the area, more moisture in the bedding area, more bacteria growth, dirtier cows, and more mastitis. Many times cows will seek out the wet muddy areas near alley exits or water troughs to lie down just to get a soft bed (and Mastitis!). As noted in Dr. Nordlund's TCI research, having a large area with deep, soft, dry bedding resulted in more cows lying down, improved locomotion scores, and reduced mastitis rates.

The better option: Harrowing!

From early spring when corrals are just beginning to dry, through the end of fall, depending on when rain and cold begin, corrals can be harrowed to promote drying and increase the depth of soft, comfortable bedding. This will reduce mastitis rates and improve lying time, resulting in less lameness and more milk.

Best results are seen with daily or every other day harrowing, often done by a young worker, after classes. Multiple designs are available, but in my experience a field harrow breaks up bedding the best. In October, open lots can be scraped down to hard pan and piled or hauled out in preparation for winter weather and bedding programs.



When is the best time to harrow? Right after a rain. Aggressive harrowing can cut drying time in half.

Total Solids in Calf Milk

You may have noticed a Total Solids percentage on your Bulk Tank Series results from Ag Health Labs if you are submitting calf milk for pre and post pasteurization evaluation. We are determining the Total Solids content with a Brix refractometer and multiplying it by a factor to calculate total solids of milk. This factor was determined by Dr. Dale Moore, WSU, and others at the University of Minnesota.



Calf milk should be between **12 and 15 percent** solids and it's very important to be consistent. If solids are below 11 percent, calves are not receiving enough protein and energy to meet demands for growth and good immunity. If solids are above 16 percent calves can develop an osmotic diarrhea, commonly referred to as milk scours, because there is too much protein in the gut, drawing water into the gut, resulting in diarrhea. If solids fluctuate dramatically, calves will experience fluctuating gut fermentation, indigestion, reduced intakes, and diarrhea.

Please contact us if you have questions regarding your Total Solids results.

How to Sample Silage

At the AABP preconference seminar on 'Understanding and Interpreting Feed Results' there was a lengthy discussion about good feed results beginning with good sample collection.

For silages, researchers found dramatic variation in dry matter and nutrients across a bunker face. Never walk up to a bunk face and grab a handful from multiple sites. The silage should be shaved off across the entire face with a bunk facer or the edge of a loader bucket. The loose silage should be piled together, preferably hauled to the mixing area and discharged (a crude mix), then multiple samples should be scooped from around the pile and placed in a bucket or similar container, the bucketed sample should then be thoroughly mixed, dumped out, and then sub-sampled from around the pile, enough to tightly fill a quart freezer Ziploc bag. Submit it to lab immediately or refrigerate if submitting later in the day. If shipping later, freeze the sample prior to shipping and ship frozen. Sounds difficult, but many dairies are already hauling silage to the mixing area where it can be sampled and the value of the result will be much greater the better you do sampling. It always helps accuracy if silage is sampled frequently, at least monthly for bunkers and closer to weekly for bagged silage.



Please fill out all water test forms

Department of Ecology requires that all source information and public identification numbers are filled out when submitting samples to the laboratory for Nitrate or Coliform testing. We are heavily scrutinized by DOE to be sure proper sample procedures are being followed and we must require all paper work is properly filled out at submission time in order to maintain our DOE certification.

Thank you for your cooperation!

Drop Boxes available!

Remember there are drop boxes available for your convenience outside our front door at the lab as well as next to the Irrigation Specialists in Pasco on 4th so you can drop samples off at any hour. Please make sure samples have labels or submission forms filled out and clearly identified if leaving samples in the drop boxes. Thank you!