PINE CREEK® REPORT
NUTRITION SERVICE, INC.

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Transition Cow Health

Over the past couple of years we have used the discussion of technical versus practical to highlight some real differences between nutrition and feeding as either being terribly complex or rather simple. In most cases getting results is all about practical application; as an example you have probably heard that mycotoxins are the cause of all things bad on the dairy. Mycotoxins can be terrible, but the dairy cow has a rumen that eats them for lunch! Have you seen cows drink flush water? That seems like it would be a bigger problem to me. If mycotoxins caused all the problems it would be a technical problem. However, sorting of the diet and Empty Bunk Syndrome look an awful lot like mycotoxicosis. Why not look at the simple, practical issues and correct them?

That being said – this newsletter will have an important technical component as well as the practical solution. If your herd is NOT having transition health problems skip to the practical information for a reminder. If you are having issues – skip to the practical information as well. So that you see it really isn't all that technical. Then come back to the technical section to get the information that leads up to the solution.

Technical Component

Transition — is defined as a change from one state or condition to another. The change in condition for the transition cow is more complex than just going from dry to lactating. There are social, physiological, metabolic, and hormonal changes. Due to all these stressors increasing the chance for metabolic and infectious diseases it is not surprising that the transition period has the potential to be catastrophic for cows.

There are lots of time periods defined as transition in the industry. Here we are focused on about 21 days before calving through the Fresh Pen on your dairy. Your fresh pen may be 2 days, or 45 days. If you go right into a high pen, then use up to 21 DIM for the transition period. The main management recommendation during the transition period is to make whatever changes are necessary as gradual as possible. Focus on the cow, not on making it easy for people.

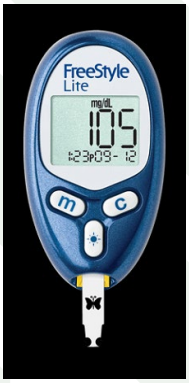
A successful transition requires a well coordinated effort. We have to balance the need to move her from pen to pen, with the fact that a move upsets intakes and hierarchy. We have to balance her diet based on requirements, yet need to maintain intakes and rumen health.

As I am writing this newsletter countless words come to mind as points to mention. Behavior, crowding, ketosis, milk fever, fatty liver, re-socialization, management, intakes, moves, RPs, DAs, water, comfort, diets, environment, and more. Putting it all together has the potential to be very confusing. The complex nature of calving and initiation of lactation takes a couple of text book chapters to really develop as a topic. Take the impact of nutrition for example; changes in the nutrition program need to be designed to promote retention of protein and muscle, maintain energy balance to minimize fat mobilization, encourage dry matter intake for rumen health, and provide vitamins and minerals to replenish reserves and support immune function. In an attempt to simplify these thoughts I want to cover two areas – tools and recording.

Tools — There are a variety of cow-level testing tools you can use to assist when monitoring transition performance. They need to be simple, relevant, and accurate. In addition, they need to make sense for your operation. We have herds that routinely monitor urine pH of close up cows. This is a relatively simple, relevant, and accurate tool to monitor how effective your DCAD diet is before calving. In our experience there are two key issues with this tool. First is the range of values you get. If the range is "excessive" this lets us know one of two things are likely happening. Did you sample cows that have not been on the minerals long enough? Or, are cows sorting the diet? Second is the actual number outcome. This is herd specific. Some herds will perform well if the value is 5.5-6.0. Other herds will do best if pH is from 6.5-7.0.

Another tool is measuring BHBA (beta-Hydroxy Butyrate) in early postpartum cows. A small blood sample taken from cows between 5 and 10 DIM and tested for BHBA is an excellent tool for assessing subclinical ketosis. There are various concentrations (cut-point) presented in the literature for indicating a problem. Our experience indicates that 1.2 mol/L is a good cut-point. Companies selling products to fix subclinical ketosis will use 1.0 as a cut-point and will be ALARMED if 15% of the animals are above this value. The alarm rate is actually herd specific; we generally do not get alarmed if a herd snap shot for BHBA is greater than 25-30% of the samples over the 1.2 cut-point.

NOTE — Alarmed and wanting to do better are really two different things. Subclinical ketosis should be considered the "Canary in a coal mine". Cows



with subclinical ketosis are 8 times more likely to get a DA. They experience significantly higher early cull rates than cows with smooth transitions. They are likely to have poor reproductive performance, lower milk production, and mastitis. So while only 25% of the cows over the 1.2 cut-point are not an alarming amount, working to do better is possible and suggested.

Recording — About twice a year we bring up the importance of proper recording as a requirement for fixing a problem. While most managers are good at knowing if they have a problem ("We are having more DAs than usual") putting it into context is usually much more difficult. We had a good example of this the other day. A manager mentioned that they were having more cases of metritis than usual. And based on a raw count the trend was definitely up. But since they do a great job with reporting we were quickly able to dismiss this based on the higher than normal calving rate, with about 16% twins! Having the data made this a simple conversation.

Recording the data is not done to ensure Gotcha Moments. Accurate data is required for knowing what is going on, holding people accountable, and making improvements. The right tools, accurate data, thoughtful interpretation, and proper protocols make correction of transition problems manageable.

Practical Solution

Dry matter intake. It really is that simple. A cow that maintains good intake through the transition period has a significant advantage over the cow that struggles to get to the bunk. This struggle can be from

lameness, crowding, cold, wet, mud, etc. It will rarely be from diet. A few years ago a client had a few of DAs in dry cows. A quick scan of the environment provided the answer. Open lot, no shade, in February – in a year when the central valley of CA received about 26 inches of rain. Cows got sick and tired of slogging through a foot of muck to get to the feed bunk.

Ketosis is another metabolic issue impacted by dry matter intake. A classical definition of ketosis is lack of energy. The correction for this is not adding energy to the diet. The best approach is to actually lower energy density a little, add high quality forage, and get better energy utilization through improved rumen function. Adding energy (usually corn, distillers) will result in decreased intake, and lower energy. Another important factor to remember is that all cows experience negative energy balance after parturition; which will likely show up as ketosis or subclinical ketosis in the first few days after calving. A rumen full of high quality forage, with some structural fiber for scratch factor, will go a long way toward ketosis prevention.

Socialization/group changes are a more tricky area than just saying “dry matter intake is a simple fix”. This newsletter won’t cover all the issues of re-socializing after a move. However, we need to accept the fact that a move alters her normal behavior which will likely result in a drop in DMI. Properly balanced diets before and after the move are necessary to smooth out the change. For the transition period there are two big factors that need to be monitored regarding behavior.

1. A move too close to calving will result in larger drop in DMI.

2. Over crowding during transition is a recipe for disaster.

Water intake is critical at this time in her cycle. Nothing impacts DMI more than a restricted water intake. Check your water trough space. Provide at least 2 linear inches per head, with 4 being a much better scenario.

Conclusion

Investigations into transition problems require us to look at factors beyond the normal scope of diet. Jason refers to this as “Nutrition Management Consulting”. Likely there are many factors at work, such as: feed freshness, duration of feed availability, bunk and stall density, heat/cold stress, parity separation, adequate time for diet adaptation, and a couple of dozen other items.

Announcements

Please join us in welcoming Courtney Michael to our office staff. Many of you know her as Courtney Ramos – Star pitcher for Hilmar High School and Southern Mississippi where she completed her Master's degree . Courtney and her husband Alex recently returned to CA and we are excited to have her on our team.

Congratulations to Philip and Shelley Verwey on their dairy being recognized as the 12th Senatorial District's Green Business of the Year for 2015. Senator Anthony Cannella honored Philip Verwey Farms with this award November 11, 2015.

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