

The crossroads of nutrition and health

by Steve Martin



Mike Rankin

IF I could take a four-year sabbatical and had the opportunity to go back to school for further learning, I am not sure if I would pursue business/economics or veterinary medicine. It seems that over time, as a consulting dairy nutritionist, I need to know more and more about these two topics. My most basic task is building diets. However, this task is immersed in and impacted by the economic results of the diet and the health and well-being of the animals fed.

The economic leaning of dairy nutrition is pretty intuitive. Our clients are business-people and need to make a return on their investments and effort. Thus, the basic nutritional science

that we apply to our client's rations needs to offer the highest return on feed investments as possible. This is not just a daily margin between milk income and feed cost, but it also addresses the long-term health status of the animal, which our client has invested in as an asset. This is where the veterinary medicine studies connect.

I have been very blessed in my career to work alongside some excellent dairy veterinarians and am pleased to call many of these people personal friends. I have worked hard to avoid the potential friction between nutritionists and vets. Rather, a teamwork environment has been the norm. Even so, I am often asked by my clients to help solve herd health issues.

When we first formed our nutrition company, I chose to put the word "management" in the business name in addition to the word "nutrition." So, I suppose I am making the statement that I am willing and able to be part of a team that solves problems

on a dairy that may connect to nutrition but are not basic in the sense of balancing rations. Managing these health issues probably falls into the realm of dairy management, so I am clearly on the hook to contribute.

There are four primary areas on the farm where this nutrition plus veterinary medicine plus management teamwork needs to be a well-oiled machine. These are young calves, postfresh cows, rumen health, and reproduction. This, of course, is not an exhaustive list, but based on my experience, these dominate the narrative.

Let's start with the calves.

So much of the success of a healthy calf program is based on good feed and milk intake. These two are certainly nutritional in nature. We are learning more and more about the caloric cost of immunity and the significant loss in energy for growth when the calf is fighting a disease.

The successful calf program includes an excellent ration and a well thought out vaccination and treatment regime. It is further enhanced by good calf management techniques. The vet and nutritionist will hopefully each have good input for the shared client on things like housing, bedding, feeding schedules, and so forth.

The nutritionist should lead topics related to milk and starter formulation, and the vet should own preventative and treatment protocols and also offer insight into the cause of disease. Even the best nutritionist will need significant help from the vet during episodes of health frustrations when diets are sound and animal care and housing is in order.

Balancing other views

When considering the health of mature cows around transition, the script is much the same. I would suspect that much of the interaction between client, nutritionist, and veterinarian would be related to this topic. Success starts even before the close-up pen with well-grown heifers and dry cows that are kept in correct body condition and fed

a sound far-off dry cow diet.

Anionic salts, energy levels pre- and postcalving, use of straw, levels and types of vitamins and minerals, and a plethora of additives dominate this conversation. This is the pinch-point for many dairy operations, and success or failure will have an impact on the overall well-being of the business.

Just like in the young calf, though, the well-transitioned fresh cow is not simply a sum of the decisions made on the various dietary interventions mentioned. There is a very significant cow comfort, housing, stress-reduction effort that is equally important. These transition cows seem to respond well to nearly anything you do for them that is related to their comfort.

The nutritionist can build a bullet-proof nutrition program for the cows pre- and post-calving. Even when ensuring excellent cow comfort and overall husbandry, fresh cow health can struggle. This is where the nutritionist needs the help of the herd health vet. There are details related to uterus health, liver function, various pathogens, and so forth that are the expertise of the veterinarian. A great example of this is interpretation of lab results, serum chemistry panels, and liver biopsy results.

I am frequently asked to interpret various results from transition cow blood or serum analysis. I have gotten decent at understanding these, especially when the goals for the various measures are on the same page as the results. But, leaning on me to really understand these reports is a bit like having the vet dig into the undigested neutral detergent fiber (uNDF), lignin, and starch rate dynamics on a corn silage analysis. The best plan would be for a veterinarian to make a full interpretation of the blood results and advise me on the information.

Battle of the rumen

The next area of nutrition, veterinary, and management consulting we will discuss is the science of rumen health. If the internal organs of transition cows are the territory of the veterinarian, the rumen is under the purview of the nutritionist. It is really where all of the magic happens. You can be sure, though, that if rumen health suffers, the vet and nutritionist need to visit!

A dairy nutritionist is most basically described as a ruminant nutritionist. The rumen is the focus of everything we do. Using our nutrition formulation models, we are tasked with the job of combining various ingredients into a diet that will not only support high milk production but also good cow health. Cows were not designed to eat high volumes of things like corn grain and soybean meal. Rumens are a little less complicated when the cows are grazing native pastures.

This process begins with ration for-

mulation but it also involves on-farm feeding programs, loading orders, mixing times, shaker boxes, bunk management, push-up schedules, and the list goes on. Good management consulting not only involves evaluating all of these steps on a farm visit but may also include training of the employees who are responsible for each step.

So, how is the effort to correctly feed the rumen evaluated? The answer involves the financial team at the dairy as well as the veterinarian. The correctly fed rumen will support high levels of milkfat that gives a big boost to the milk check. The veterinarian can contribute with input on incidence of displaced abomasums, rumen acidosis, and hoof health issues. The battle of milk production is won or lost in the rumen.

Lean on others

The last area for our discussion will be reproduction. This is an area where I am always quick to step aside and let someone else lead. My goal in this effort is to be sure we have diets in place to support a good transition with a healthy uterus and as little weight loss as possible. The diets need to be sound and deliver appropriate amounts of vitamins and minerals to support a healthy reproductive status.

There is no shortage of measurable data to let us know how the dairy is doing getting cows pregnant in a timely manner. This includes several metrics from dairy management software that describe reproductive success and employee evaluation, or it may be as simple as monitoring body condition scores. If the vet or breeding company feels that extended negative energy balance and extreme body weight loss are limiting reproductive success, the nutritionist should be consulted.

I am thankful that I am not expected to solve every problem on my clients' dairies. I must confess, though, that I feel that weight at times. If I get a call from a client informing me of significant uterine health issues in fresh cows, my immediate response is to start thinking of every possible cause of the problem and the potential solutions.

What I should do instead is pick up the phone and call the vet. Then a meeting with the dairy's fresh cow manager would be in order to see if any cow comfort or other husbandry issues may be part of the problem. In most cases, good teamwork will lead to improved results.

Maybe it is impossible to separate nutrition consultation from veterinary care and the best management expectations. In fact, keeping these different disciplines as connected as possible is probably the secret to success. So, I will keep on leaning on the vet when I need to and working with other resources available to improve overall cow management. **WEST**



Martin

The author is the founder of Dairy Nutrition and Management Consulting LLC, which works with dairy producers and heifer growers in multiple Western states.