



Energy drained beyond symptoms

FOR those of you who know me, you'll readily speak to how easily distracted I am at certain moments. For better or for worse, at times, we'll head in another direction as my attention is diverted elsewhere and my focus shifts. Tongue in cheek, sometimes I compare myself to a goldfish, and I wear it with pride.

This personality characteristic is playing out in this month's column. I had intended to write about dry matter intake after discussions with Kenn Buelow a couple of weeks ago. However, that topic will have to wait. Last weekend, my focal point immediately changed overnight from dry matter intake to feed hygiene. That's because I ate some bad food and got sick — simple as that. The symptoms lasted less than 12 hours, thankfully. Despite short-lived symptoms, my energy level was depleted for days after the nastiness subsided, so much so that I couldn't even complete half of my functional training workout, despite my guts feeling okay.

What about a cow?

In light of this experience, I then thought of myself as a high-producing dairy cow, and not a goldfish. If my energy level was so dramatically depleted after a quick digestive upset, I again wondered what kind of energy drag high-producing cows experience after a bout of digestive upset runs through the herd.

The best we can do at this point regarding the energy demand associated with sickness is lean on Iowa State University's Lance Baum-

gard's research. In research conditions, clinically sick cows' immune system energy demands equaled what is found in 6 to 8 pounds of corn grain. That's a pile of energy, but my body told me earlier this week something very real is happening following gut health issues.

In a future article, veterinarian Angie Rowson and I will discuss how feeds can interact with the reproductive systems and contribute toward costly mycotic abortions. We'll head down that path in this article and combine my personal gut health issue with the fact that silages and wet feeds are "waking up" with microbial growth potential. Given that background, let's revisit feed factors to watch for that can impact gut health in cattle living on today's dairy farms.

Feeds will wake up with microbial growth more so during warmer and wetter weather. Yeast, mold, and undesirable bacteria are more apt to grow and proliferate with both warmth and greater moisture. Just like a baker adds water and sugar to flour and then warms the dough to make it rise, any microbial contamination in dairy feeds will rise with moisture and warmth.

There's a long list

I'll continue to reiterate that many different feed microbial contaminants beyond mycotoxins need to be accounted for. There weren't mycotoxins in my burger over the weekend; rather, it was likely something bacterial. Such microbial contamination will first affect intakes, then rumen and gut health, and then herd energy levels.

I believe this is a major frontier

for us to make gains in dairy nutrition over the next five to 10 years. Hidden energy loss, such as what I felt after my guts straightened out, I believe is happening from the East Coast to West Coast and robbing dairies of feed conversion and profit potential.

The four feeding bases

Delving into the hygiene issues to be on the lookout for, think of different risk factors to cover like the bases on a baseball diamond. The four different bases represent the feed anti-nutritional factors that will interact to negatively affect your bottom line.

First base corresponds to fungal growth. Cover first base by watching for colorful mold and using a thermometer or infrared camera to identify spoilage yeast. Sampling for yeast and mold growth can also be helpful, but remember these contaminants are usually not evenly spread through forages.

Covering second base is mycotoxins. Too often we start on second base, but I think we need to start with yeast and mold at first base.

Rounding second and heading to third base, check for bacterial contamination. Bacteria can be found everywhere in the environment, including in your forages and feeds. Many are benign, but both *Clostridium* species and *Enterobacteriaceae* species have no place in your ration. If these bacterial groups are present, then we've got cleanliness opportunities. Look for dirt and mud, rain or wastewater, or manure contamination points throughout the feed mixing and delivery path and equipment. Pres-

sure washing your mixer can help here, too!

Lastly, home base in the feed hygiene diamond equates to covering environmental and nutritional stress factors. We know stress negatively affects the immune system, adding to the energy draw.

Within the nutrition program, I tend to look at starch content and digestibility. Poor starch digestibility means we often need more starch in the diet to maintain performance. However, more starch plus less digestible starch also equates to grain bypassing the rumen. The mechanism at play interacting with gut health is vague, but I believe rumen bypass starch is a contributing factor to gut health issues. And not to be ignored, review your feeding records and ensure your diet is delivered every day consistently and as expected.

Keep vigilant

Coming back to my unique ability to pivot quickly to interesting topics, thanks for bearing with me on the shift to feed hygiene. Dry matter intake is a critical metric for your farm to have nailed down and we'll visit this topic in the future. In the meantime, make efforts to stay on top of gut health factors and keep the dietary energy in your herd directed toward production and profitability. 🐮

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