

Brix is for the Birds

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As I do talks and workshops, I run into people who are working hard to create the perfect pasture. They ask me about Brix, and nutritional value of weeds or what the perfect seed mix might be to meet the nutritional requirements of livestock. Here's what I tell them:

Brix is for the birds. So is the perfect seed mix. Those things look at nutrition from a human perspective. There's no point in understanding the plants if you don't understand your livestock - how they're put together, and how they go about their jobs of getting bigger and fatter. Once you understand you still might not be able to make order out of the chaos. But you can relax a little bit and let nature take its course.

Here's what you need to know about your animals. They know more about their jobs than you do. It's not that they're necessarily smarter, but they have access to information you don't that lets them choose on a moment to moment basis just what food to eat in order to continue to grow big and fat. Every bite they take is carefully monitored. Nerves running from the rumen to the brain constantly send signals about the nutritional value of what was just eaten. Other nerves throughout the body send their own signals to the brain, indicators that maybe a little more protein might be necessary, or a little less, or that the belly is full now and it's time to stop. This is called "Post-Ingestive feedback," and all these internal signals are part of how the animal decides what its next bite should be.

How do we know this is so? Well, if you run a dairy, or if you've ever finished cows for slaughter, you've seen what I'm talking about. You pour a Total Mixed Ration in their feed bins, something put together to meet all the nutritional requirements of the average cow, and then watch as they sort through it, avoiding some of it all together, and even stealing what they like most from their neighbor. This behavior has led some dairy farmers to conclude that modern dairy cows are "genetically predisposed to being jerks, in that they work to unbalance their own rations through sorting feeds."

So what's happening here? They're not jerks, they're just doing their jobs and paying attention to the post-ingestive feedback that tells them what they really need. That TMR might be great for the average cow, but who among us is actually average? In fact, researchers have tested cows to really see if they know what they're doing. In one experiment, they planted pasture in strips of high protein clover, grass and clover mixed, and grass only. In the barn they were fed two different rations. One had only 11% protein and the other 21%. When the cows ate the low protein ration, they spent time grazing in the high protein pasture strips. When they ate the high protein ration they grazed the low protein grass strips.

Another experiment focused on feedlot steers. One group of cows was given the industry standard Total Mixed Ration. The other group was given a choice of the individual elements of the Total Mixed Ration. Both groups gained weight at the same rate. But the animals who had a choice of what to eat gained at a much lower cost,

demonstrating that they knew what their job was – to grow big and fat – and they knew exactly what it took to do that.

So what does this mean to you? Well one bison rancher took this idea home to his feedlot in Wyoming. He quit mixing feed and let the animals choose instead. His weight gains went from an average of 1.75 pounds per day to 2.3 - 2.4 pounds per day. In addition, the animals were healthier, suffered less from acidosis and scours, and best of all, his labor was reduced allowing him to sleep in on Sunday mornings and still make it to church.

In pasture this means that maybe what you think is the perfect pasture, isn't perfect for your animals. For example, a producer in Missouri planted a pasture of legumes and nutritional analysis showed that the pastures were high in energy and protein. But his animals ate little, lost weight, and preferred moldy hay and tall fescue. Researchers later determined that the legumes had excess protein and were high in cyanogenic glycosides, toxins that can create aversions to foods. Once the producer added grass to the pastures the animals had enough alternatives that the toxins no longer bothered them, they were able to pick and choose a more balanced diet, and production improved.

So, if you want the perfect pasture, what should you do? Consult the experts! Not the guys at the feed store, or the fellows trying to sell you new equipment or seed. Consult your livestock. Pay attention to what they're trying to tell you by what they choose to eat in pasture. Do a little analysis of your own on the things they don't eat. It could be because they never have so they don't know it's good. It could be because they have more than enough of what that forage provides. Or it could be that there's some kind of social dynamic at work, and they've trained you when to move them next.