by Steve Martin

Are you envelopes or binders?

OF ALL livestock industry sectors, I think statisticians love dairying the most. In a race that really doesn't have a close second, dairy farms generate more data than any other animal production system.

Dairy cows and laying hens are the two animals whose production must be sold daily. I'm no poultry expert, but I suspect there are fewer things measured in the egg business than are measured at dairy farms.

Not only do we measure how many pounds each cow produces per day, lactation and lifetime, we break it down even further by also measuring the amount of fat, protein, lactose, milk urea nitrogen, somatic cells, etc. We measure them because they are directly related to the income derived from selling them.

In recent years, many tools have become available to measure the amount of feed it takes to make milk – so many that the statistician's interest in dairy might be exceeded by the economist's. In how many business models in agriculture is it possible to develop daily profit and loss statements on individual animals? We have the tools to do just that in modern dairying.

Not only is the statistician excited about the plethora of cow data, and the economist happy to compute their dollars and cents, but the biologist may have the most to learn of all. How many places in nature can you detail the inputs given to a complex living biological system and then measure results the next day?

The dairy cow is amazing in so many ways. She gives the biologist every-day opportunities to study how she consumes primarily carbon and nitrogen, rips them into pieces in her body, and then rebuilds them into fat, protein and other solids contained in her milk. By comparison, other biological production systems might take weeks or even months to show measurable impacts of various changes in inputs.

A century of data

I often wonder if those of us involved in dairying today are taking full advantage of all the information that is available to us. The dairy industry has been compiling mountains of numbers for maybe 100 years now. My grandfather tested milk for Alabama DHIA in the 1930s. He travelled the state on week long trips, going from dairy to dairy to weigh milk and gather information about breeding and feeding. After returning home, his handwritten data was taken to Auburn University to be summarized and then reported back to the dairy owners by mail. The goal of the process was to improve milk production – and thus profitability – of the farm.

The "I" in DHIA still stands for improvement. The goal is not really different from modern DHIA or similar efforts in the private sector. The reason for gathering data is to improve profitability of the dairy by finding ways to feed and breed, and thus milk better.

Looking at the huge increase in the amount of data from then until now is amazing. But I wonder if we are taking advantage of it to the same degree that small west Alabama dairy farmers did 80 years ago during the Great Depression? I suspect they eagerly waited for the postman to deliver those few morsels of basic information from the most recent testing day.

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Today we have many times that amount of available information every day, but are we wasting it? I think at times we can become overwhelmed by the amount of data that dairies generate. We need to find ways to distill the mass down into more bite-sized pieces.

Unopened and dusty

Zoom forward from my grandfather in 1930s Alabama to me sitting in a dairy office outside Stephenville, Texas, in 1991, where we find another data point in this story.

It was early in my career and I was on a steep curve learning the dairy business. At one producer's office I remember seeing a dusty filing cabinet, on top of which was an even dustier stack of green and white envelopes – dozens of them. When I asked what they were, he replied that they were summary reports of his monthly DHIA milk tests.

"It looks like none of them have been opened," I said, and I asked why he paid for monthly testing but didn't value the information enough to even open the envelopes.

He said that after each visit from the milk tester he always received a printout before he left that showed each cow's identification number, milk production and days in milk. He said that was all he really needed, so the envelopes just continued to pile up as they arrived.

A little while later in business, I worked with another producer who had a bookshelf full of big binders that had a different year noted on each one. It turned out that what was piled on the dusty filing cabinet at the first dairy was three-hole punched and organized by date at the second dairy.

I soon learned how much more information was in those reports compared to the printouts left by the milk tester, such as data about breeding performance, milk production by lactation, days in milk and even a value for each cow in relative to the herd.

I'll bet you won't be surprised to hear that the dairy with the binders was significantly more successful than the dairy with the dusty, unopened envelopes.

In my business of formulating dairy diets and helping producers become more profitable, I often think about those envelopes and binders. It is important that we be smart in how we utilize the wealth of data that cows generate. We need to take a lead from the statistician, economist and biologist and work hard to distill down to the meaningful data that can help us in decision-making.

We all have the tendency to overemphasize one of these three areas at the expense of the other two. But the best approach is to work like a statistician and decide what we are going to measure and how, think like a biologist and consider what cows are telling us and how we might use science to achieve different results, and think like an economist and use science to generate the most profitable results.

In a real sense, this is exactly what I do when I formulate dairy rations. I start with biology and economics to build the ration. Then I use data from results generated by the cows to evaluate success and make sure the economic results are what the biology predicted. And when the situation changes I start all over again.

It is the correct balance of thinking like three specialists – statistician, economist and biologist – that offers dairy producers the best opportunity to feed for the bottom line. *WEST*