



by Steve Martin

## How much do your cows weigh?

OK, I AM calling myself out. There is something that I really need to be better at, and I'm guessing I am not alone. That thing is knowing how much my client's cows weigh.

It's not that I don't want to know or haven't tried to find out, it's just that actual body weight data are few and far between in the dairy industry. When compared to other animal agriculture sectors, our industry places dead last in this seemingly logical metric. Yes, we are maybe the best at body condition scoring, but that is primarily a measure of subcutaneous fat cover that is irrespective of the animal's weight.

Not having had the benefit of growing up on a dairy farm, I remember once in grad school making a few rules of thumb notes on a 3x5 card to help me remember some key dairy facts. One was that a mature dairy cow weighs 1,450 pounds. I suppose some animal science textbook said 1,450 was the mature weight and, interestingly enough, Google pretty much agrees with that even now when asked, "how much does a dairy cow weigh?"

Soon after grad school and upon entering the dairy feed and nutrition world as a young professional, this 1,450-pound value seemed to have made the jump there as well... so it must be true. I will admit now, after 26 years of building diets for dairy animals, I am not sure that we know and use much better data than what was on that 3x5 card.

I have always been a little suspicious of people who are overly confident about their ability to guess the weight of a heifer or cow. I suspect the ones who can do it well simply spend too much time at the sale barn.

I suppose some do have a better eye for this than others, but as we look deeper into ration formulation modeling, feed conversion efficiency, and knowing when to breed heifers, I for sure need to improve the current situation of guessing the weight of a set of cows. I'm betting you do too.

### Always going up or down

Why is this so hard? For one, the weight of a dairy animal is pretty much always on the move, and in both directions. To gather meaningful data, frequent measuring of body weight might be necessary. Also, we often get the same response as we do from other metrics that are individual cow related; "we feed them as groups not as individuals, so an average is probably good enough."

This may be true, and actual information from measured weights that are presented in group averages would be great for ration formulation, but what about individual cow value analysis for making culling or mating decisions?

We are measuring nearly every other possible

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piece of information in dairy animals, and much of it is daily or even at each milking. How could an actual "over the scale" body weight have been left out of this effort? We literally have our hands on these animals two or more times each day, so is it too much to ask to measure how much they weigh?

The logical response might be that yes we can do it, but what is the cost and how will it improve my bottom line? These are both valid questions and should be considered.

We won't delve into the cost of being able to collect this data here and will focus on the potential benefits instead. But I must contend that in a large-scale production system that would require a complicated and potentially costly investment, or at a small dairy where the setup could be much more basic and still effective, the hundredweights of milk in either case could probably handle the required investment.

### Helpful in many ways

There are commercially available systems for large-scale dairies. In addition, some old-fashioned farm level engineering could likely have you up and going in no time at a small operation. In either case, body weight data could be used in various ways to improve ration formulation, management, and economic decision-making.

There are automated systems with the capability to read electronic ear tags as cows go over a scale behind the parlor or in a robotic milker. In this case, daily milk weights could be useful for several things, but two come to mind first. How great it would be if we had a new metric to monitor as we evaluate performance post calving and in early lactation. With daily body weight measurements, "average daily loss" could be monitored in fresh pens to compare actual to expected or allowable weight loss in early lactation.

Likewise, on the other extreme of days in milk we could monitor weight gain in late lactation. This data would be very helpful in building the right diet for lower production cows to control feed cost and reduce the risks of over-conditioning. The ability to also record a dry-off body weight and compare it to weight at freshening would be a great assessment of the overall dry cow nutrition program.

In each of these cases, knowing actual body weight would allow for more precise ration building. In addition to the relationship of feed intake to milk production, the weight of the animal has an impact on how the diet is built. Part of a cow's intake goes to support maintenance requirements and those needs are directly proportional to the size of the cow.

But what if a fancy system that makes electronic transfers of daily body weights to herd management software is not possible? Do you have to drop the topic? No. Using some creativity and a little inconvenience, a plan can be built to at least mea-

sure the "book-ends" and do a little math to fill in the blanks.

As an example, let's start with a basic approach: weigh pre-calving heifers and use that to compare to cull cow weight. That will at least give you a place to start. If possible, a great addition to this basic approach would be to add some weights on first lactation animals at dry-off. Using these three average weights, I bet you will come pretty close to knowing what your cows actually do weigh.

We have all heard of a recent trend toward smaller, more efficient cows. With hopes of reducing feed intake, keeping a similar milk flow, and having a more durable animal, the economics are promising. I wonder if anyone has actually taken the time to weigh some mature cows after these breeding efforts to see if they have really moved the needle. The individual cow measurements would be great to see if younger cows in the herd are in fact lighter than their older herdmates.

One of the hottest topics in our industry in recent years has a direct connection to this issue. In the seemingly unending race to breed younger heifers, do we really know enough about actual mature body weight for a particular farm to help determine how young is too young?

There are many differing opinions about how to decide when to breed heifers. Although the quest to make age at first breeding younger and younger is only a few years old, breeding upon weight rather than age has been the accepted practice for many years.

The newer approach uses percent of mature body weight as the trigger to move a heifer to a breeding pen. But with some herds breeding for smaller Holsteins, others doing crossbreeding, and yet others making the switch to Jerseys, how good of a job are we doing to know for sure what our actual mature cow weights are? It matters a lot.

We are making a commitment to learn more about cow body weight at our clients' operations and it is an effort that will look different at each farm. For some, top-of-the-line electronic ID will move data from the scale to the herd management software. At others, where animals routinely move on trailers from one part of the farm to the other, weights over the truck scale will be documented. And at other places we hope to encourage a bit of inconvenience and use ground load trailers to spot-weigh some animals at pre-calving, at the end of lactation one, and at dry off for some older cows.

Adding this information to already available cull cow weights, we can calculate an estimated mature weight for each client's animals. In doing so I will be a better nutritionist, the client will be a better manager, and the cows will win in the end. The result of all the effort will be that we can be sure we are correctly monitoring body weight dynamics and even more sure that we are feeding for the bottom line. **WEST**