



by Steve Martin

# Do body condition scores tell the whole story?

THEY say football is a game of inches and fractions of a second.

At my alma mater's stadium a few years ago, one second left on the clock allowed for the most unexpected result ever of a long field goal attempt. In the same stadium a few weeks ago, the final second cost a successful opposing coach his job.

In both cases it occurred to me that the way a play clock is started and stopped during the first 59 minutes and 59 seconds of a game has far more "wiggle" than the one second at the end. In other words, clock management in the press box seems to be an **inexact** process that is regulated by a clock with an **exact** process.

I wonder if we have the same dynamic with any of the metrics we use to evaluate dairy animal performance? Are we using highly subjective measurements and observations to calculate key averages, standard deviations, and confidence intervals? One example is the difficult task of evaluating and tracking body condition scores (BCS) in dairy heifers and mature cows.

In an industry where statistically valuable measured body weight information is about as scarce as vegetarians, we depend heavily upon the "eyeball" test. This is a surprising reality when one considers the biological and economic ramifications of body weight changes.

In growing heifers, lean body weight gain is a crucially important measurement. In mature lactating cows, evaluating weight loss and gain is akin to monitoring the balance in your checkbook. Energy balance for lactating cows is hard to track, with issues including variable intakes of differing densities of feed, and various levels of milk production with differing levels of components. And if you walk through a pen of near-peak milk cows, you certainly see varying body conditions.

## BCS opinions vary

Are we supposed to monitor the results of all of this with a subjective body condition scoring system? This has proven to be a potential issue as our consulting team works together on clients' farms. Since the BCS system is subjective, it offers opportunity for a break in technical communication between our team members and our clients. These things matter, and quite a bit.

Let's say, for example, that a team member agrees with the client that a group of animals is thinner than the goal. The ration that is created to address the situation may cost several cents more per head per day. If the amount is a nickel for 1,000 head, then it becomes an investment of \$1,500 per month for the client.

After a decision is made and a new ration is in place, what if another

member of our team uses the same subjective BCS system and feels the cattle look just fine. What do we do then? Yes, this happens; it is not a perfect system. But why should it be so hard?

As with any subjective measure, it is helpful to know what variables influence the observation. We have found these potential influences to be many and real, and knowing they are out there has improved our ability to evaluate cows and make correct decisions about how ration changes can impact our quest for perfectly conditioned animals.

Let's talk about heifers first. There is one farm we work with where I

In both growing heifers and lactating cows, hair coats can also be problematic. In many cases, nice slick hair coats seem to boost a BCS. Likewise, dull and dingy hair coats seem to make animals look thinner. But not always. During the multi-year drought in the Southwest a few years ago it was difficult to truly evaluate BCS on growing heifers. After having no rain to wash hair coats for so long, plus relentless wind that seems to drive dirt deep into the hair, the cattle just looked poor. But poor doesn't necessarily mean thin. Don't let the situation with hair coats fool you.

Of all of the items we measure on a per-cow basis and then average

moved to Texas from Holland. He told me something like this: "When you first walk into a group of cows, take about one minute and decide what you think about them. This will be your best analysis."

Using this approach, we should be able to walk into a pen of heifers or cows and decide pretty quickly the answer to this question: What is the "risk" in this pen? Are we potentially too thin? Are we perhaps over-conditioned? Or can we really say that the cattle look about right? The answer will probably carry more value than individual body scores averaged and graphed for presentation.

## High and low BCS risks

To take the question of risk one step further, based upon a particular age and class of animals it is clear what the greatest risk is for them. For fresh and early lactation cows it is low BCS, while in late lactation it is high BCS.

In heifers it probably depends upon the stage of life and the feeding program. If they are pasture-raised and have seasonal forage quality and quantity issues, low BCS is a likely risk. With confinement fed heifers in a region where the least-cost ingredient is corn silage, a likely risk is over-conditioning and thus high BCS.

Develop a system where the animal evaluation step quantifies the percentage of outliers that can describe that risk, then track the number over time.

Much of this discussion has centered around heifers, where we actually do have an occasional weight measurement to help us gauge our success in the process. But we still spend quite a bit of time looking at and discussing their BCS.

In milk cows we never have a body weight, but we can estimate energy balance by knowing milk solids production and feed intake. But since we never have individual intakes, that math is a bit academic. What if there were scales on your parlor exit and every day you knew average body weight change for every pen on the dairy? Or what if you could know it for every individual cow?

That would be powerful information that would greatly aid ration formulation. Such technology is available now, although it is only very occasionally used. But one can always hope!

Having a good eye for cattle is certainly an asset for a nutritionist or a dairy producer, and we should use BCS example pictures and charts to have the best skills possible to evaluate cattle. But we have to remember the limitations of such a system.

If we can look for the percentage of outliers that describes the most common risk for a particular class of animals on a particular farm, we will have made progress. Then, making thoughtful ration changes to address that risk will help us be sure we are feeding for the bottom line. **WEST**



routinely look at the heifers by myself in the morning, and then again with the client after lunch. I have noticed that in nearly every instance scores during the second look seem higher. I have a theory why:

Most heifers have empty or light bunks during overnight hours, so they consume a high percent of their daily intake between a mid-morning feeding and early afternoon. Rumen fill has a big impact on the way they look. Full heifers look better, which can trick your visual BCS analysis. Don't let rumen fill fool you.

I also find that BCS can be higher in mid-day evaluations, and sunglasses being on or off also matters.

Much of the detail in evaluating the prominence of hip bones, ribs, etc. is aided by shadows. When the sun is high in the sky shadows are simply harder to see. In the early morning or late afternoon shadows can likely be exaggerated. I have even had a different view of the same pen of heifers from the east side of the pen during an early evening look, versus the west side. Don't let shadows fool you.

together for analysis, I think BCS communicates the least information. First, we are using a mathematical process to **exactly** average a measurement that is very subjective. Second, a pen of peaking milk cows could average an acceptable 2.9, but that doesn't really communicate what may be going on with the cows. One way to get around this is to look for outliers and quantify them.

There are very few things in life where you find yourself solidly in the middle. In most things we all "fall off the horse" on one side or the other. No matter if it's politics, personality style, appetite for risk, or whatever, we tend to lean one way of the other.

It's also the direction in which we have risk if we lean too far. In this analogy, and for whatever the measurement, everyone falls into one of three categories – right, left or center. I think we can use this approach in any group of cattle that we are attempting to evaluate for BCS.

Many years ago as a young nutritionist, I learned something from a feed customer who had recently

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