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What Do Your Cows Weigh and is it Important?

Within our group of nutritionists we have had an ongoing discussion about cow weight at different dairies. We all have strengths and skills that we bring to an organization. Our nutritional consulting group is no different. I believe that I bring some strength in my ability to "see" cows at each dairy visit. I believe that my production livestock background has enabled me to be extremely accurate at estimating animal weights. I even have ability across different species of farm animals. I was extremely surprised when some dairy cows were weighed at one of our client dairies. My weight estimate for his Holstein cows was 400 pounds lite and my estimate for his Holstein/Jersey crossbred cows was 200 pounds lite. I was very surprised that my estimate was inaccurate. This article is not about me, but about why cow weight is important.

The dairy industry has realized shrinking profit margins for some time, which has increased the need for more efficiency. Dairymen are often looking to save pennies across various areas of the dairy. Feeding a quality ration that supports the maintenance needs of the animal as well as the increased nutritional needs to produce large quantities of milk is an area where costs are very visible and easy to evaluate.

Maintenance nutritional requirements of all animals are calculated based on the body weight of the animal. Maintenance nutrition is simply providing nutrition just for the animal to stay alive. The nutritional needs that are required to keep the heart beating and normal cellular function but not to produce a product. This nutritional need would not meet the needs of the animal to provide fetal nutrition or lactation. Those nutrition needs are additive to the maintenance requirement. If the nutritionist is underestimating the weight of the dairy cow, then the ration will not be supplying enough nutrition for maintenance, which will mean the animal will use the extra nutrition we put in the ration for fetal growth and lactation to meet that need. There is some discussion among physiologists that the maintenance needs of dairy cows needs to be evaluated more closely. The next version of the NRC will likely reflect these concerns. Maintenance requirements are influenced by the weight of the animal because as weight increases, so does the requirement to maintain more tissues. Dairy cows specifically have been shown to have larger livers than other bovine that can impact nutritional needs. There will likely be further evaluation of other internal organs for size differences in dairy cows when compared to other bovine. The question is whether the multiplier used along with body weight needs to be increased for dairy cows. All nutritional models begin the ration formulation process by calculating the maintenance requirement of the animal first. If the multiplier is not correct, then the model cannot correctly account for the maintenance needs of the animal in the formulation process.

Most dairies have multiple rations in place simultaneously. The common theme in all rations is the maintenance requirement that must be met first. After the maintenance requirements are met then production requirements can be calculated. For example, a dry cow ration meets maintenance then we have to supply adequate nutrition for fetal growth. If the maintenance requirement is not adequate due to the wrong multiplier and/or missing the weight of the animal then the cow will have to use some of the fetal development nutrition to meet her needs to stay alive. Lactating rations will need to meet maintenance, lactation, and early fetal growth. In this example, many areas will suffer if we miss the weight of the cow. The lactating cow will be borrowing nutrition from lactation to meet maintenance then she will rob some nutrition from fetal growth to meet her lactation needs. The cow will always meet her maintenance needs first.

In this time of amazing technology, it is surprising that something as simple as a set of scales could have a big impact on the bottom line.