

# How do I know if my heifer is ready for breeding?

**Débora Santschi**

*Nutrition and Management Expert*

**and Julie Baillargeon**

*Research Project and Technology Transfer Coordinator, Valacta*

The ideal time for first breeding should be based on heifer weight rather than age. But measuring heifers is an arduous – and hence oft-avoided – task. Are there alternatives for monitoring heifer growth? Are these other methods reliable?

## What are the alternatives to the weight tape when it comes to determining heifer weight?

The most valuable tool for determining heifer weight is of course a livestock scale. Failing that, a weight tape is a good alternative. In fact, heart girth and scale weight are positively correlated at more than 97 per cent. Nonetheless, both tape and scale measurements require time and handling. And let's face it: who likes measuring heifers? So let's look at the alternatives.

## Growth model for predicting heifer weight and height

Figure 1 presents the growth monitoring tool developed by Dr. Roger Cue, at McGill University. Recently integrated in the Analyse+ software used by Valacta advisors, this growth model makes it possible to monitor heifer growth on an individual basis. It is also possible to use the model to predict heifer growth from an early age. Consequently, this new tool can be used to predict early on when a heifer will reach 55 percent of breed mature body weight and thus be ready for first breeding.

## Is the growth model as accurate as a weight measurement?

The more data entered in the model, the greater the prediction accuracy of the growth curve. This means, however, that it is still important to measure heifer weight. If you are only weighing once a year, for example, you won't be able to use the model to its full potential.

**The solution:** Measure your heifers every 3-4 months. At this rate, the model will be able to accurately predict a growth curve. Between the actual measurement periods, you will be able to use the model to predict weight values that are sufficiently accurate to adjust feed requirements as needed. Make sure, however, that you measure the heifer again just before calling the inseminator, so your decision to breed is based on the animal's actual weight. Post-breeding measurements are also necessary to ensure that growth is continuing normally.

## Height at the hip or the withers?

It is certainly a lot easier to measure height at the withers than it is to weigh the animal! And it's even easier to measure hip height, since the orientation of the heifer's head is of no importance. A height measurement provides information about the heifer's skeletal

growth, but not about tissue or organ development. To determine if it's time to breed, you can tie a coloured ribbon to a post in the free-stall barn and breed the heifers as they reach this height. Or just use a stick with a line on it: above it you breed, below you wait!

## Is height as accurate a measurement as weight?

We often hear about the famous 51 inches at the withers, or 53 inches at the hip, as a height guideline for first breeding for Holstein heifers. This measurement corresponds to 131 cm at the withers and 136 cm at the hip. But how reliable is it? The figure below illustrates the relationship between weight data and hip height measurements for nearly 13,000 Holstein heifers in the Valacta database. It is immediately obvious that the correlation is positive. On the other hand, for a given height, we have heifers of all sorts of different weights. At a hip height of 136 cm (53 in.; blue line in the graph), for example, we see that the average weight is about 400 kg; so no problem, since the target weight for Holsteins is 391 kg. On the other hand, some of the heifers with a 136-cm hip height weigh 275 kg, and some weigh 550 kg! A far cry from the optimal weight for first breeding...

**The solution:** Hip height can be used as a guide to determine if a heifer is ready for breeding, but it is vitally important to validate that with additional observations. While heifers with good capacity, development and width may be ready, tall but thin heifers will benefit from a few extra kilos before breeding. Taking a weight measurement from time to time, and not only at breeding, is essential to monitor growth and accurately assess your animals' needs and optimize feeding.

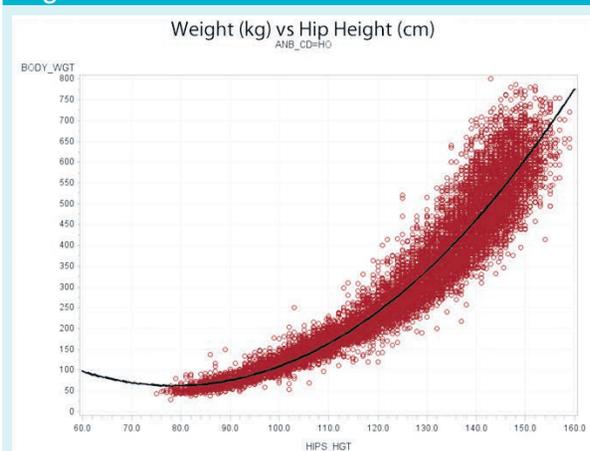
## Beyond breeding...

Measuring heifer weight ultimately enables you to determine the right time for the first breeding. Likewise, it helps steer your advisor in the right direction in formulating rations for your heifers. Heifer requirements depend on actual weight as well as the target average

daily gain. Weight also affects the prediction of dry matter intake, another critical factor that must be considered when formulating rations.

So don't put the tape too far away if you want to reach your growth objectives, breed at the right time, and accurately evaluate your heifers' needs. The growth model and height measurements are excellent tools to use on a regular basis, but they should be backed up with occasional weighing.

Figure 1



At a given hip height, heifer weight varies!

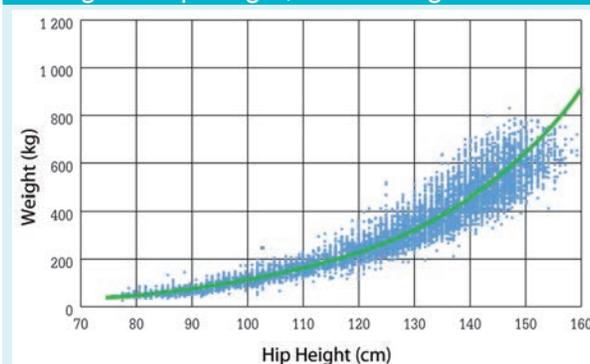


Figure 2 : Body weight curve for an individual heifer

