

You can not manage what you do not measure!

The wise quote by management guru Peter Drucker (1909-2005) – “You can’t manage what you don’t measure!” – applies to all areas of economic activity, and also to agriculture. But many decisions are still based on human instinct.

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This is also true for calf rearing: the goal of a daily increase from 800-1,000g is accepted by many farmers and is often pursued. We are now aware that calves which grow faster due to intensive rearing will produce more milk in the future. This effect is called metabolic programming.

But it is not possible to determine the precise weight of the calves without weighing them regularly. Fewer than 12% of farms weigh the calves during the milk phase. And only 9% of farms weigh the calves at least twice. This means that 91% of farms do not ascertain the daily increase in weight of their calves and thus have no information about the individual performance of their calves. How do these farms intend to make important decisions about feed strategies or the selection of animals?

In this article, you will find out more about the different methods of weight recording and their benefits for successful calf rearing.

There are basically three ways of determining the weight of the calves:

- Measuring tapes.
- Mechanical or electronic animal weigh scales.
- Integrated scales in automatic calf feeders.

Calf measuring tapes and barn charts

The easiest and most cost-effective method of recording animal weights is with measuring tapes which measure the animal’s girth. The weight can be simply read off a scale on the measuring tape and recorded on barn charts. It is necessary to bear in mind that the weight is only an estimate. But if calves are repeatedly measured with the measuring tape, the calculated increases are definitely informative.

It is important to take measurements several times during the milk phase (at birth, after 4, 8 and 12 weeks). This is the only way to get a complete image of the development of the calf.

The weights are then entered on barn charts and compared with the targets.

Mechanical or electronic animal weigh scales

Animal weigh scales can record the weight more accurately. Here too, it is necessary to

weigh the calves several times during rearing. As with the measuring tape, the values should be recorded on a barn chart and compared.

Newer electronic animal weigh scales can be equipped with RFID antennae, which record the weights and then store them automatically for the relevant calf. The data can often be exported and then further processed.

The data is much more convenient and informative if it is transferred automatically to management software. This makes the actual weighing work much easier for the staff. There are already systems on the market which allow the entry of additional information during weighing.

When the birth weight is recorded, information on the calving process, colostrum intake etc is entered directly into the terminal of the animal weigh scales. Thus, important information is stored, which can later be supplemented in the software by other information from calf feeders or MilkTaxis and holistically analysed.

Integrated scales in automatic calf feeders

The most comprehensive weight information is provided by animal weigh scales which are integrated directly into the feeder station of calf feeders. At each visit, the weight of the calves is recorded and

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Calf measuring tapes.



Integrated scales in an automatic calf feeder.



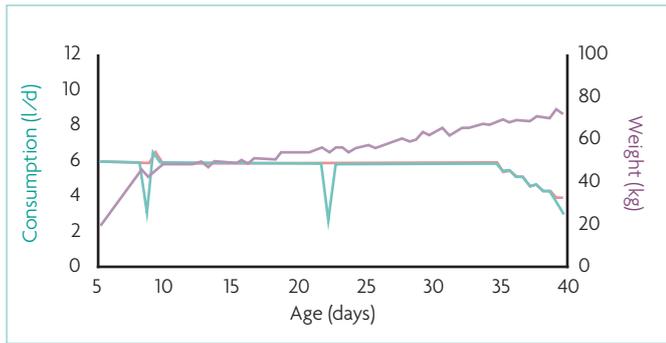


Fig. 1. The feeding and weight trajectories of calf number one.

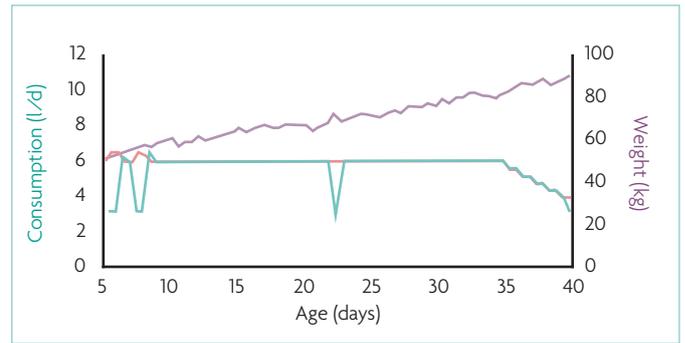


Fig. 2. The feeding and weight trajectories of calf number two.

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extensive data records are created which provide information about the development of the calves on a daily basis.

As calves which are suffering from diarrhoea instantly lose weight, even though they are still drinking really well, it is possible to identify these calves more quickly via the alarm list by weight than via the alarm list relating to milk consumption. Severe cases of diarrhoea can often be avoided by an early treatment, reducing the use of medicine.

The second important reason for equipping a calf feeder with weigh scales is the possibility of weaning the calves on the basis of their individual weight development. By this method, calves which

consume concentrate and forage at an early stage are weaned more quickly. This saves the cost of milk replacers or whole milk and promotes the subsequent development of the calves into ruminants.

Furthermore, the animal weigh scales, in combination with management programs and analysis software, provide very detailed information about the future performance of the calves in their evaluation. Various investigations on the subject of 'metabolic programming' show that calves with a high feed intake and an above average growth later also have a higher milk output during lactation.

Thus, Soberon et al. have found out that 85-111kg more milk is produced later during lactation for every 100g of increased daily

weight gain as a calf. So if the calves grow by 1,000g instead of 600g per day, 450kg more milk can be expected in their first lactation.

Thus, in addition to the genetic value of the calf, the information on the animal weight provides additional important information with regard to the following question: which heifers will remain on the farm to be reared and which animals will be sold?

Particularly in times when a conservation of resources and environmental constraints often raise the question of whether all animals should be reared, these additional selection parameters are becoming increasingly important.

Monitoring growth

It is also important to find out when the calves have grown. In Figs. 1 and 2 you can see the feeding and weight trajectories of two calves.

Both calves were unremarkable with regard to their consumption and almost always consumed their full quantity. But it is clear that the first calf weighs just 75kg at the end of the rearing, whilst the second calf ends the milk phase with a weight of approximately 90kg.

The first calf gained almost no weight in the period up to 20 days, whilst the second calf constantly grew at a rate of approximately 900g/day.

The first 3-4 weeks in the life of a calf are decisive for the metabolic programming and the early udder development. Thus, the second calf should clearly be preferred over the first calf in the selection for the future dairy herd.

These points show that the quote from Peter Drucker is more topical than ever. It is rarely good to make management decisions based on human instinct. Choosing options based on little information is no better. In calf rearing, a lot of information must be gathered to set the right course on the farm. 'Calves are the future of the farm' says every second publication on the subject. Let us finally begin to act accordingly! ■

References are available
from the author on request