

# Farming for a Better Climate



## Improving weight data capture and utilisation to drive suckler herd efficiency

### Balgay Farm

Balgay Farm, located near Inchtute in the Carse of Gowrie Perthshire, is owned by I&S Graham and managed/share farmed by Iain Wilkinson. The farm extends to 405 hectares, with a spring calving herd of 180 pedigree beef Shorthorn, Hereford, and also commercial cows. The cows at Balgay are split between two herds; one predominantly beef shorthorn herd owned by I&S Graham and managed by Iain, and another Hereford based herd owned by Iain. The farm also runs 450 breeding ewes and an arable enterprise consisting of barley, wheat, oilseed rape and beans. All livestock are finished on farm with a proportion of females kept back for breeding, utilising home produced silage, barley, and beans in the ration.

Iain is passionate about using data to help improve his suckler cow efficiency, and with a wide range of mature weights within the herd, a key area to focus on is reducing mature cow size. With the majority of the herd at Balgay being pedigree it can be easy to focus on pedigree traits while subsequently losing performance. Iain aims to produce pedigree animals that can perform in any commercial system by identifying the animals on farm that are most efficient with the feed and resources the farm provides. However, it is also important that reducing cow size and selecting for efficiency does not affect the finishing beef enterprise by also reducing calf size and therefore extending the time to finish.

### Technology and data recording software

Previously, Iain was using a TruTest XR5000 weigh head to capture weight data at the crush. This is a great bit of technology however the weigh head was not being used to its full potential and was unable to link with both the app and the stick reader to automate weight data collection. The Breedr software package is used on farm for various record keeping including calf weights, cow weights, medicine, and calf registration records. As part of this Farming for a Better Climate (FFBC) project, a TruTest S3 weigh head was purchased. The S3 weigh head is a simple weigh head that links via Bluetooth to Iain's TruTest stick recorder and the Breedr app making the data collection process slick and simple, with weights recorded with the push of a single button. All cows and calves at Balgay are EID tagged using low-frequency tags allowing data collection to be automated. The only way to further automate this process would be installing a panel reader on the crush. Another benefit of the stock recorder is the ability to record calving data. This has streamlined the process of keeping paper records at calving time, and registering calves automatically with ScotEID.



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## Cow efficiency

Weights of cows and calves were collected at weaning time in early December 2023 to calculate cow efficiency i.e. the percentage of body weight a cow weans, where the calf weight is adjusted to 200 days. This is a key measure of efficiency in the suckler herd, with the industry target being for a cow to wean 45% of her body weight. It is calculated as follows:

$$\text{Cow efficiency \%} = \text{calf weight at weaning (adjusted to 200 days)} / \text{cow weight at weaning} \times 100$$

There was a huge spread of weights within both of the herds at Balgay, with the lightest cow being 500kg and the heaviest cow 1054kg (see Table 1 below). In terms of feed efficiency and cost, the heaviest cow requires an extra 53MJ/day for maintenance over the lightest cow. This is equivalent to the energy in 4.5kg of dried barley or 16kg of silage (at 30% dry matter and 11ME). Throughout a six-month winter, this equates to an additional £145.92 to keep the heaviest cows over the lightest (baled silage at £50/t) highlighting the increased cost of keeping heavier cows.

Table 1. Weight range in both breeding herds at Balgay.

Animal group	Balgay Herd	Balgay Farmhouse Herd
All cows/heifers Average	786	760
All cows/heifers Range	563 – 1054	500 – 999
Cows only Average	809	787
Cows only Range	563 – 1054	598 – 999
Heifers only Average	652	661
Heifers only Range	578 - 748	500 - 780

For the 2023 calving year, the Balgay herds had an average cow efficiency measure of 36.3% and heifers weaned a slightly higher percentage of their body weight than cows, as shown in table 2.

Table 2. Cow efficiency (herds combined).

Animal group	Average 200-day calf weight (kg)	Average cow efficiency %
All cows/heifers	282	37.2
Cows only	285	36.3
Heifers only	268	41.12

We also looked at the effect of cow weight on efficiency looking at the 10 most efficient cows versus the 10 least efficient cows on the farm. The results were that, on average, the most efficient cows were 273kg lighter compared to the 10 least efficient cows. This demonstrates that lighter cows are weaning more in relation to their body weight while requiring less feed, reducing costs and subsequently producing lower levels of emissions. It is also important to consider other factors such as frame size, body condition, and calving ease in future breeding decisions.

## Calf growth performance

All calves are weighed monthly to assess growth performance. This allows daily liveweight gain (DLWG) to be calculated pre and post-weaning and also regularly during the finishing period. Regular monitoring can help track progress, identify periods when and why cattle may not be performing optimally, and help monitor the impact of a change in nutrition on management on performance. It can also be used to help identify whether there is an influence of sire on growth rate and age at slaughter, aiding future breeding decisions to help further improve efficiency.

Balgay operates a gradual weaning process where all calves are housed whilst still on their mothers. A separate court is then provided for calves, split by an electric wire to stop cows getting through. Here, calves are provided with their post-weaning TMR consisting of the best quality silage, homegrown bruised barley, and homegrown beans. At the time of weaning gates are shut keeping calves on their own and they continue to be fed the total mixed ration. Post weaning the calves are then split by sex and rationed accordingly, feeding heifers for breeding and stepping up the steer's ration for finishing. This has minimised post-weaning growth checks without the need to creep feed pre-housing. Calf daily liveweight gains average around 1.15kg per day at weaning and 1.11kg per day for the 30 days post-weaning.

## Time benefits

Automation of data has also been extremely beneficial in time saving at Balgay both in the office reducing time needed to input and analyse data and time spent at the crush improving working efficiency. At the latest weight session, the farm averaged 100 calves every hour, averaging 37.5 seconds per calf weighed including time spent loading calves into the crush.



## Environmental impact

The aim for the suckler herd at Balgay is to improve cow efficiency by reducing mature cow size whilst also maintaining the growth performance of pedigree and finishing cattle in a commercial system. This will help reduce associated emissions as smaller cows eat less and therefore produce less methane. There are also fewer emissions associated with the reduction in feed required, whether that is home-grown forage, cereal, or protein. Another area where carbon savings can potentially be made is by reducing the time to slaughter through more targeted nutrition throughout the animal's life. Data allows us to closer tailor rations to the requirements of calves to optimise performance and reduce wasted nutrients.



According to Iain: "If I was going to have any tips for anyone else that wanted to collect data, I would say do a little bit of research on what's out there and make it as automated and easy as possible. The easier you make it, the more likely you are to use it and the more likely you are to get the benefits of using it. "

## Key points

- In terms of feed efficiency and cost, the heaviest cow requires an extra 53MJ/day for maintenance over the lightest cow costing an additional £145.92 over a 6-month winter.
- Lighter cows are weaning more in relation to their body weight while requiring less feed, reducing costs and subsequently producing lower levels of emissions.
- A gradual weaning system has minimised the post-weaning check without the need to creep feed pre-housing with calves averaging around 1.15kg per day at weaning and 1.11kg per day for the 30 days post-weaning.
- Automation of data has also been extremely beneficial in time saving both in the office reducing time needed to input and analyse data and time spent at the crush improving working efficiency.

## Find out more

In the 'Improving data capture and utilisation on farm - Balgay Farm' video we hear from Iain and Lorna Shaw of SAC Consulting about the benefits of weighing cattle and recording data to optimise the efficiency of the suckler herd. Here we discuss the results of a project looking at improving suckler herd efficiency using weight data to make better informed breeding and management decisions and how technology can help with ease of data collection and analysis. A key focus for Iain is reducing mature cow size to optimise cow efficiency and reduce costs of upkeep, as well as monitoring growth performance more closely in calves and finishing cattle. The video is available at <https://youtu.be/0N0Oxqk9LnQ>



Andrew Houstoun from Glenkilrie Farm, Perthshire was also involved in this on-farm trial with Farming for a Better Climate. Watch his video to learn how automated data capture helped him to improve farm management decisions. <https://youtu.be/DliUImL3PYU>

