Working towards net zero carbon emissions

Maximising growth rates

Practical Guide

Farming for a Better Climate

There is increasing focus on agriculture as part of the Scottish Government's commitment to achieve net zero emissions by 2045. Ruminant livestock will always emit methane, one of the greenhouse gases implicated in climate change. Rather than focusing on reducing livestock numbers, farmers can work on improving on-farm efficiencies to reduce emissions per kg of beef sold, in turn increasing business profitability.

Whether managing a beef breeding or finishing system, good nutrition plays a key role in ensuring efficiency. For both systems, live weight gain is a key performance indicator, whether to ensure breeding replacements calve at 24 months or to finish cattle earlier. SRUC research has shown that finishing cattle at 12 months can reduce greenhouse gas emissions by as much as 3 times when compared to finishing cattle at 24 months. Earlier finishing improves profitability through reduced feeding bedding and other variable costs. There were no considerable differences in body conformation or condition.

Whilst optimum nutrition plays a role in efficiency improvements, it also relies on factors such as health, welfare, genetics and managing quality forage and fodder. More information on these topics can be found in the other Practical Guides within this series.

This Practical Guide looks at ways to maximise growth rates within the beef herd

Relative Feed Value

Feed costs could account for as much as 75% of variable costs. It is therefore important to ensure a balanced and cost effective diet to achieve optimal performance. Grazed grass is the cheapest feed for ruminants - stocking rate and high utilisation are key to many beef systems.

When considering alternative or supplementary feeds, it's useful to benchmark the nutritional value against the costs. This is where relative feed values are useful.

Relative feed values take into account the energy (ME) and crude protein (CP) content of proposed feedstuffs and compares their feeding value to that of barley and rapeseed meal as reference feeds. With this information and the knowledge of current prices, a cost comparison can be made on the feed value of any feed.

When purchasing additional feed ask for a nutrient analysis. Your local agricultural adviser or nutritionist can help to explore the most cost effective options based on the nutrition provided from your base diet.

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Creep feeding calves

With genetics playing a large part in how your livestock perform, monitoring is key to ensure that you are meeting the needs of your stock and in doing so, enabling peak performance.

Before weaning, calves have a feed conversion efficiency of up to 3 times that of a finishing animal. Creep feeding calves is an option to harness that efficiency. To be considered as breeding replacements, heifer calves should achieve 65% of their mature weight by 15 months.

As the rumen develops to accommodate the new feed, feeding can increase to around 4kg/head/day. The latest that creep feeding should be introduced is two months before weaning. This can reduce the transition stress on young animals.

The creep feed offered should be 11-12 ME/kgDM and 18% CP/kgDM (dropped to 14-15% CP/kgDM) once calves have established a regular intake. Spring born calves will benefit from early grass growth. Autumn born calves should be offered quality hay from birth to help develop the rumen.

Regularly weighing calves to monitor growth rates allows for feed adjustments to be made to ensure that liveweight gain targets are being met. Using the sire's EBVs can highlight the calf's potential growth rate and weight at 200 days. Additional information on EBVs is available in the 'Improving breeding in the beef herd' Practical Guide as part of this series.

Cereal finishing systems

Cattle fed on an all cereal diet can finish at an earlier age (by 12 months). This is beneficial when considering greenhouse gas emissions; the animal's feed conversion efficiency is higher and it has less time to emit methane. It is an option for farms located in an area where quality grass growth/silage production can be difficult. When purchasing concentrates to feed, refer to the Relative Feed Value to ensure cost-effectiveness.

Grass based finishing systems

Grass based diets are suited to much of the agricultural land in Scotland that is unsuitable for growing crops. Maintaining soil health, optimising nutrient use and pasture management are key to the success of grazing systems.

This system of production can be more extensive and prolong the finishing period for cattle to the point where methane emissions will impact the business carbon footprint. However when correctly managed, grazing cattle provide benefits to soil health and biodiversity that are often overlooked in the context of greenhouse gas emissions.

This practical guide is part of a series looking at steps you can consider to reduce emissions whilst maintaining a profitable farm business.

For more information, tips and ideas and to read what other farmers have done, visit ***www.farmingforabetterclimate.org****. Find us on* ***Facebook*** *and follow us on* ***Twitter*** *@SACFarm4Climate.*

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