

Sustainable feed sources a key consideration when formulating rations

Hefin Richards of Rumenation Nutrition Consultancy suggests how you can improve financial performance whilst improving carbon credentials.

As an increasing number of farms complete carbon footprint reviews, usually driven by milk and meat processors, they can form the basis of some useful discussion points. It would be fair to say that many who may have begrudgingly entered into the process, have a more positive view once the final results are available and can be analysed.

In many ways, carbon footprint data is like any other technical or financial benchmarking, and the value is in the scrutiny and analysis, and identifying areas for change and improvement. There will obviously be a range of results achieved when comparing farm to farm, with a bell-shaped distribution curve of results, with a small number achieving excellence, a small number with very poor scores and the majority of producers sat either side of the median.

Whilst the footprint score and ranking is a useful starting point, looking at what makes up an individual farm score is where we can identify areas to target, and look for easy wins.

These will vary between farms, and in many cases, external factors or limitations may make changes in certain areas hard to achieve. Key areas to look at for most farms are as follows:

- Milk/solids output relative to system
- Age at first calving
- Culling rate and cull value
- Reproductive performance
- Feed/forage efficiency/utilisation
- Fertiliser use
- Fuel and energy use
- Feed selection and sourcing

Once we look at these components, it becomes obvious that virtually all (if not all) of the above will lead to improved financial performance whilst improving carbon credentials.

As an industry, we are on a journey, and some are further down the road than others. If we look at the above headings individually, we generally find that several of them are intertwined and see that improvements in one area have positive



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impacts on others.

For example, improving reproductive performance, through better transition management, or use of heat and health detection systems will have an impact on:

- Milk output through lower average days in milk (target for AYR calving herds around 170d)
- Culling rate, or allow better selection of culls and improved genetic gain
- Feed efficiency; since early and mid lactation cows will convert more feed into milk than cows with extended lactations.
- Youngstock requirements, further reducing feed and forage requirements and fuel and energy use.

Sustainable feeding choices has become a key consideration when planning rations, with a number of retailer aligned milk contracts (and beef schemes) focussing on the removal of soya and palm based products either on the basis of discouragement through their negative impact on the individual farm's carbon footprint, or a ban on all soya/palm-based products.

Whilst these conditions have been in place on some aligned contracts, the recent introduction of Arla's sustainability program is the first to effectively offer producers a range of options which (including feed sources) directly impact on milk price.

For example, usage of soya (unless guaranteed from a sustainable source) will negatively impact on milk price according to the amount used.

From a nutritional point of view, soya bean meal has been a “Gold Standard” product for many years.

It is over 50% protein, has a relatively good amino acid profile, being high in lysine, it is a concentrated protein source so a small amount has a big impact, and it is also high in energy with an ME of around 13.5Mj/Kg DM.

Having fed cows for over 30 years, it is interesting to reflect. The BSE crisis in the early to mid 1990's led to a ban on the use of rendered animal proteins, and this ban was extended to include fishmeal, which was widely used and highly valued by those running higher yielding herds.

There was a widespread view that not being able to feed fishmeal would make it impossible to meet the needs of high yielding dairy cows. By high yielding, most were looking at 9000-9500 litres, and diets containing 2-3kg soya and 0.5kg fishmeal were commonplace. Fast forward 30 years and many now have the same fears when it comes to reducing or removing soya from diets. Cost, and environmental concerns have seen soya bean meal use plummet in dairy rations over the past 5-10 years and milk and solids outputs have reached levels way beyond those achieved with higher protein, soya-based diets were used.

Rapeseed meal has become the staple protein source, with various protected rapemeal products available alongside the raw extracted (using crush and solvents) and expeller (heat and crush) products. Protected rape products are commonly based on formaldehyde treatment, whilst others favour a high



Which UK Livestock sectors use soya?

The approximate breakdown of annual soyabean meal usage in

UK Livestock Sector	Total annual soyabean meal in use (in tonnes)	Average annual soyabean meal use in feed (%)
Dairy	360,000	7.3
Beef	60,000	3.9
Pigs	360,000	9.9
Poultry (meat)	1,264,000	21.0
Poultry (eggs)	210,000	11.2
Sheep	30,000	2.4
Equine	5,000	3.0
Fish	47,000	13.4
Other	51,000	10.4
Total	2,378,000	9.17(avg)

Data provided by AIC

temperature natural wood sugar-based treatment (Xylig).

Distillers grains from bioethanol have become more widely used, with UK wheat product and UK and imported wheat and maize based meal available.

A recent report by AIC estimated that 360,000t of soyabean meal is consumed annually by UK dairy cows, this equates to around 0.024kg or 24g of soya per litre of milk produced in the UK, this is around 7% of the total concentrate used. The poultry meat and egg sector consumes around 1.5m tonnes of by comparison.

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Some feed suppliers are now offering guaranteed source of origin North American soya, but if relative value of soya vs rapeseed and distillers remains as is, we are likely to see soya use fall further in coming years. Additionally, there has been a general and significant reduction in total dietary protein levels, and a drive to produce and retain more true protein from forages, forage legumes and pulses. This trend will continue, as environmental constraints call for more innovation and efficiency at all stages of the milk production process.

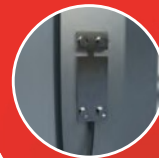
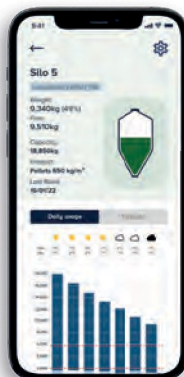


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