



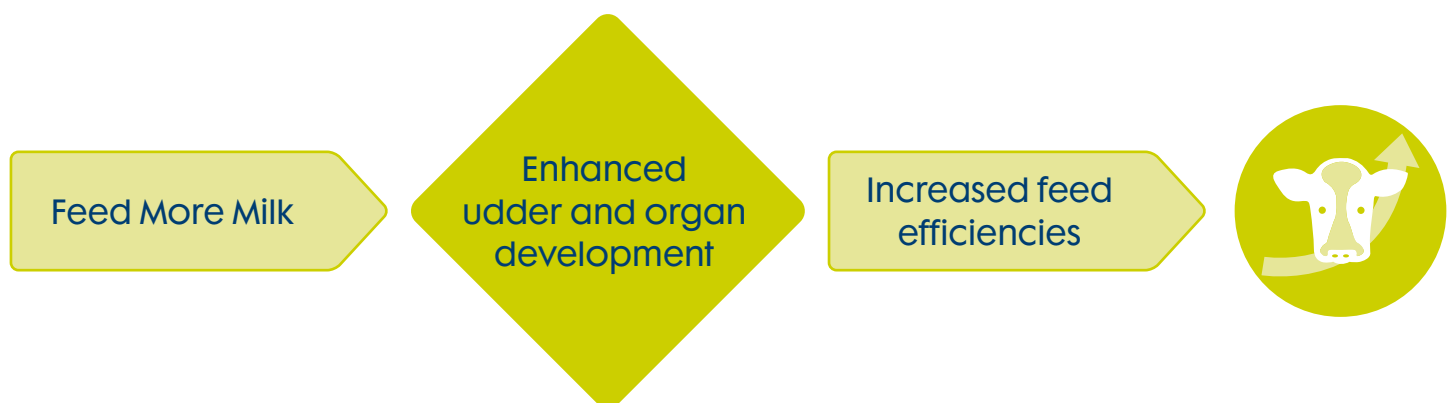
Maximising forage efficiency

A carbon footprint reduction strategy

There has been considerable focus on the carbon footprint of certain raw materials and their subsequent effect on the carbon footprint per kilogram of Fat and Protein Corrected Milk (FPCM), but as with all carbon reduction strategies a holistic approach is needed. Although sustainability is currently a prominent focus in the industry, there's no need to wait for the next innovation to contemplate carbon footprint reduction strategies.

By considering the ration as a whole incorporating forage quality, the carbon footprint reduction per kilo FPCM could be more substantial than anticipated. By prompt evaluation of forage quality carbon footprint per kilogram of FPCM can be reduced, whilst boosting both financial and animal efficiencies. Farm profitability can be improved through reduced reliance on other raw materials to balance the forage and secure supply chain.

Thankfully, we have numerous vital tools ready for use to kickstart progress, including a re-evaluation of best practices. By shifting focus from solely milking animals to the entire herd, we can make efficiencies that indirectly lower the carbon footprint per kilogram FPCM. For instance, implementing the Feed More Milk strategy now could result in enhanced udder and organ development. This, in turn, leads to increased feed efficiencies when these animals enter the milking herd in two years.



How does forage and feed contribute to the carbon footprint of milk?

Feed accounts for nearly 40% of the milk's footprint (Figure 1), encompassing purchased feed, silages, straights and their respective quantities. In the example provided, enteric methane also constitutes over 40% of the footprint, which can be influenced by diet formulation, feed quantity and the number of animals being fed.

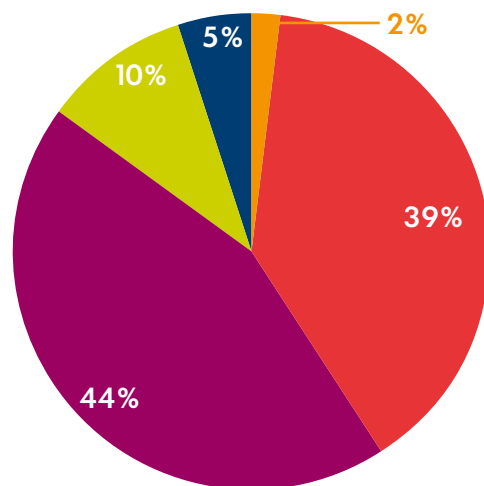
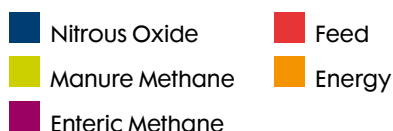


Figure 1: Example footprint breakdown. Source TNGB MyMilkPrint.

What impact does forage quality have?

To make the most out of your forage, you first need to know exactly what you have. Although we try our best to get a representative sample, frequent sampling is important to capture changes which can then be balanced correctly when rations and minerals are balanced to complement. If this balance is correct, reliance on purchased feeds can be reduced alongside the carbon footprint of the diet.

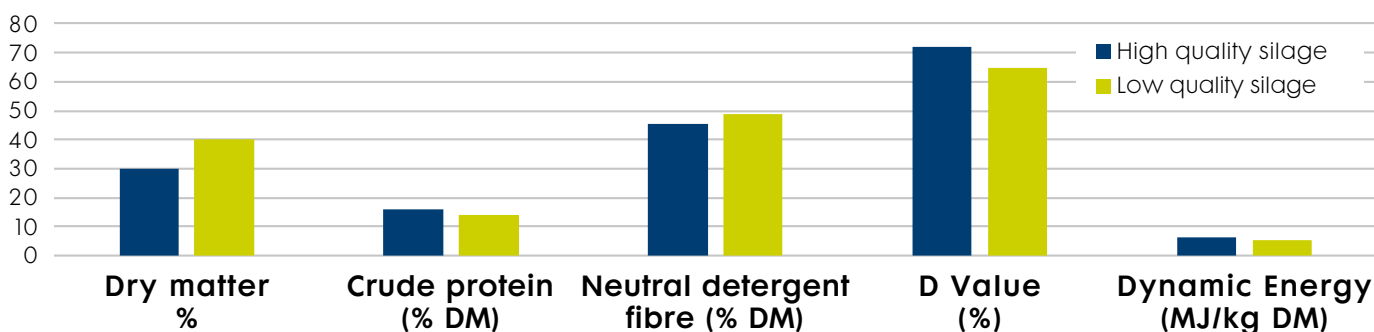


Figure 2: Analysis variation between silage qualities.

Figure 2 displays this by comparing a high quality forage diet with a low quality forage diet. Both diets optimised to meet the requirements for 30L of milk, considering achievable forage intake, compound feed level and compound formulation. What we see is a minimum 3% carbon reduction per kg FPCM switching from low to high quality forage.

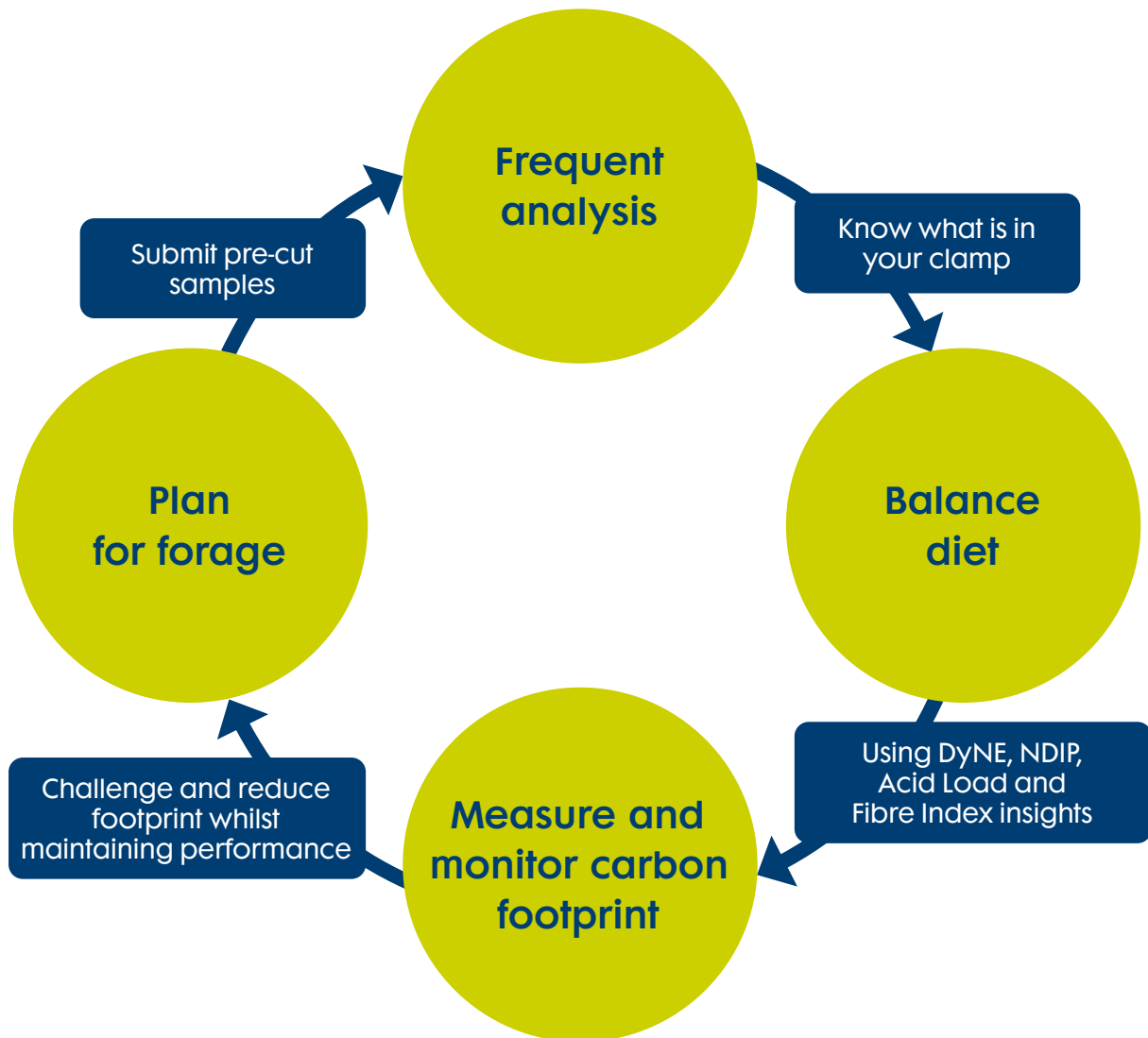
Two kg DM less of poor quality silage meant that 1.3kg more of compound feed had to be fed. In this example the feeds had a similar carbon footprint per tonne, however that may not always be the case depending on formulation and protein level.

With recent weather trends, we need to be aware of the impact that this is having on forage quality. We have seen crude protein levels in forages decreasing, highlighting the need for optimal silage quality and balancing in the ration to ensure that requirements are met without having a negative impact on carbon footprint whilst supporting farm profitability through production efficiency.

Being proactive on farm

Lowering footprint need not come at a cost on farm. If a holistic approach is applied sustainable choices can be cost neutral or even profitable.

- Ensure adequate planning for forage production by regularly taking pre-cut samples to monitor grass growth and determine optimal timing for silage preparation.
- Continuously analyse forage to track any changes.
- Utilise the NutriOpt Dairy Model to effectively balance the cow's diet, meeting energy and digestible protein requirements, optimising rumen fermentation and promoting rumen health.
- Assess the carbon footprint of feeds through MyFeedPrint, utilising MyMilkPrint to measure and monitor the carbon footprint per kg FPCM, thus understanding the impact of forage and feed on milk production's overall carbon footprint.



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