



DN NEWSLETTER

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As the single largest cost of production on farm, good quality forage is the cornerstone of any profitable dairy, beef or sheep business. Additionally, the higher the quality of forage, a greater proportion of yield from forage can be achieved.

The rumen is the engine of the cow, and with a capacity of 120 litres in a mature cow (roughly the same as a wheelie bin), it processes 50-100kg of fresh material the cow is fed every day. When feeding cattle or sheep, it's important to remember that the population of bugs or microbes in the rumen are being fed too. These organisms, in turn, provide the animal with the majority of the energy, protein and vitamins they require, while also significantly contributing to immune defences.

Therefore, the greater the efficiency of the rumen, the better the forages are utilised and the performance is improved. In order to optimise rumen function and increase the amount of nutrients extracted from diets, the rumen microbes need the following in order to thrive:

1. Consistency (in diet)
2. Water
3. Balanced nutrient supply (energy, protein, fibre (NDF) and minerals)
4. Stable rumen pH
5. Low levels of oxygen

Calculating Diet Composition

When calculating diet composition, the first component to look at is dry matter (DM) content as our starting point and this can differ greatly between different forages.

Once the dry matter content is calculated, the other nutrients which are available need to be assessed. Achieving a balance of the below nutrients allows the optimum performance, in terms of milk yield, liveweight gain and fertility, to be achieved.

1. Energy – Fibre, starch, sugar (both rumen degradable and bypass, as well as how easily they are degradable as the bugs need a steady supply) and oil
2. Protein – both rumen degradable and bypass
3. Minerals and vitamins

Forage Variability

Forages are inherently variable - particularly this year - and this is something we must consider while also remembering that the rumen bugs need consistency in the diet as they need to adapt to changes slowly. If ration composition changes too quickly or is disrupted, this will negatively affect performance as a result.

This year's forages are more varied than usual, but generally contain high DM, good ME and lower protein levels. Early first cuts are performing really well with later first cuts and second cuts analysing higher in NDF and lignin content, making them more difficult to digest by the rumen microbes.

However, care must be taken when talking about averages as not every farm's forage will match this trend, so it is essential to analyse forages for individual farms and not rely on averages. As the saying goes, if Bill Gates were to walk into a bar, on average that bar's patrons would all be millionaires! Additionally, the degradability of starch within maize silage increases in the clamp over time – another thing to be mindful of.



Five Steps to Maximising Forage Utilisation

1. Test

There can be substantial variation in nutrient analysis through the clamp, particularly if different cuts are clamped together. The clamp should be tested every 4-6 weeks because small differences in the silage quality will have a substantial impact on performance.



3. Manage Diet Changes Carefully

Abrupt changes in diet, particularly with forage, have been shown to put cows off their feed and reduce the amount of feed digested.

This leads to reductions in milk yield and live-weight gain while the rumen microbial population adjusts to the new diet – this takes three weeks for full adaptation.



4. Cow Comfort, Maximising Intakes and Monitoring Cow Signals

Maintaining high levels of DM intake is key to maximising forage levels in the diet, and one of the most common obstacles to this on farm is insufficient head feed space and poor feed barrier design.

Feed efficiency and milk production are also optimised when cows spend enough time lying down and chewing the cud, making cubicle design another central component to maximising milk from forage.

All Dugdale Nutrition Sales Specialists are certified Cow Signals Advisors.

Please contact your local DN Sales Specialist or DN HQ for more information.



2. Balance Diets Based On Forage Analysis

Once we know what our forage contains, we can complement the diet with additives and/or concentrates to meet the needs of the rumen. The chop length should also be taken into account as this can effect digestibility. Diet digestibility is the key in determining how much milk we can achieve from forages.



5. Minimise Waste

It is estimated that 15-30% DM silage never reaches the animal. In order to minimise waste in silage clamps, it is essential that we do not introduce oxygen as this can lead to the proliferation of undesirable micro-organisms, leaving the silage unusable.

Taking the following steps can ensure that silage is kept fresh and unspoiled:

1. Only pull the top sheet back as far as necessary
2. Take clamp face back 2m/week
3. Get across the face every 3-7 days
4. Block cutter or shear grab
5. Don't leave silage in mixer wagon overnight
6. Clean troughs regularly to minimise spoilage



Cow Signals

Farm Facilities

- Minimum of 65cm head feed space per cow
- Set the neck rails to the average height of the cows – bald patches on the cow's necks indicate the feed barrier is restricting intakes
- Cows should be able to reach out 1.0-1.25 metres from feed barrier (1.3m high)
- Push up 5 times per day
- 1 cubicle bed per cow
- 20cm of water trough space per cow



Cow signals to look for...

- Rumen fill is an indicator of feed intake and how well animals are adapting to diet changes: 3-4 hours after morning milking, look for a score of 3 or greater. The triangular area in front of the hook bone on the left side of the cow should be filled out.
- 70% or more of cows should be lying down in the cubicles chewing the cud 4 hours after morning milking (if not eating or drinking,) with 55 or more cuds per bolus. Rule of thumb: Every hour resting chewing the cud equals an extra litre of milk.
- Cows should spend 12-14 hours per day lying down and 8 hours per day ruminating (Less time doing this the less efficient at digesting forage!)
- Dung consistency: high amounts of grain and fibre in the manure can indicate that dietary transitions or forage variability is negatively affecting performance.

Optimise Rumen Efficiency with Actisaf Live Yeast

Actisaf increases the efficiency of the rumen by altering its biochemistry and providing the right environment for the rumen microbes to thrive. This leads to:

- Improved fibre digestion and feed utilisation, giving more milk from forage
- More stable rumen pH and reduced risk of acidosis
- Increased energy production, particularly in the form of propionate
- Minimise dips in performance due to diet changes and/or forage variability

ActiSaf^{Sc 47}

Recent trial work from the University of Nottingham has proven Actisaf® to:

- ↑ Feed efficiency by 5.5%
- ↑ Milk yield by 5.9%
- ↑ Butterfats %

Actisaf® is included in many of our compounds. Call your local DN Sales Specialist or DN HQ on 01200 420200 to learn more!

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Summary

Forage is a key component of your business. Forages are very variable, and cows (or bugs) don't like variability. Think of the rumen as the engine of the cow. When feeding the cows, we are actually feeding the microbes in the rumen. Remember the five steps to making the most from this year's silages:

1. Test, Test, Test
2. Balance diets based on silage analysis
3. Manage changes in diet carefully
4. Maximise cow comfort and monitor cow signals
5. Minimise waste

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