

Harbro Head of Dairy - Rumen Friendly Concept, Mike Phillips looks at Rumen Rate and how this measurement can be utilised on farm to improve performance and farm efficiency.

## PUTTING THE RUMEN AT THE HEART OF DAIRY FARM EFFICIENCY

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Putting the rumen at the heart of dairy farm efficiency.

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The dictionary definition of efficient reads as follows: 'If something or someone is efficient, they are able to do tasks successfully, without wasting time or energy.'

The word efficient is regularly used when we talk about farming and farmers are often challenged to become more efficient.

However, if we look at farming and milk production, we can see that through its use of technology and driven by market conditions it has already become more efficient, which is a testament to the hard work of the farmers and those involved in the industry (see below).

in acid loading which will in turn lead to healthy milk production.

Working with you, our dairy specialists utilise data collated from various sources including Harbro Milk Monitor, Keenan In-Touch, milking parlour/robotic software and milk recording information to look at the current situation on farm and what measures can be implemented to improve performance and ultimately profitability.

By understanding your business and how it ticks, it allows our team to work with you to set critical performance indicators that are relevant to your unit. This might

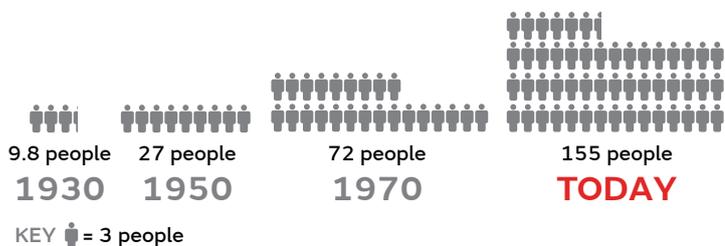
be something as simple as milk yield, but equally this could be pregnancy rate, feed cost per litre, milk yield per cubicle space, or one that we have found very

kilo of milk for the least dry matter input. Our understanding takes it further and shows that if rumen rate is too high (above 1.6), whilst milk is produced cheaply, this may be at the detriment of key indicators as cows in early lactation milking off their back will impact on fertility and cow health. If rumen rate is too low (1-1.2) then cows with a high average days in milk will be gaining excess body condition meaning they are less economically viable and potentially more prone to metabolic problems in their lactation.

Of course these figures will depend on each farm's particular circumstance, for instance, days in milk has an effect on rumen rate, so block calving herds will vary throughout the year, however it is a valuable assessment which will allow feeding regimes to be adapted to ensure consistent herd health and productivity.

So why would you start monitoring rumen rate on your farm?

#### HOW MANY PEOPLE CAN ONE FARMER FEED IN A YEAR?



So how does the dairy sector move forward and continue to progress?

Our Rumen Friendly Concept is all about efficiency working in conjunction with the well-being of the dairy cow. The idea is to create a diet that is rumen friendly or low

useful is Rumen Rate.

Rumen rate measures cow efficiency and how many litres she can produce per kilo of dry matter intake.

The rumen rate however does so much more than look at the ability to produce a

**The simple answer is that every 0.1 improvement in rumen rate is potentially worth 60p per cow per day. That is equivalent to £39,420 for the average UK 180 cow herd.**

# MILK MONITOR UPDATE - WHAT IS AN EFFICIENT DIET?



When we think about improving efficiencies, the key areas that we are typically told to focus on are reducing our feed costs by using more forages and home grown feeds and buying in less concentrates to increase our margin over purchased feeds (MOPF). In reality however there is only one true measure of feed efficiency and that is money in minus money out: What are your monthly feeds cost and how big is your milk cheque at the end of the month.

So rather than focussing on whether the feed is bought in or home grown, the most important question we should be asking ourselves is "Is this feed good value for money or can I buy in something that is cheaper and/or higher in feed value?". Recent information gathered by Milk Monitor has shown that even the current focus on feeding more forage doesn't automatically mean you will have more money in the bank at the end of the month. In contrast, the data actually shows that the less forage you feed, the more milk you will produce and the more money you make (see fig. 1 opposite). This is because the most important driver of feed efficiency and herd margin is not your ration cost, but is in fact your daily milk yield.

Because milk yield is driven by energy, the higher the energy density of the ration the more milk you can produce. So, although there is a place for high quality forages in these rations, for the typical UK dairy farm, concentrates will always provide more energy than any home-grown forage and it is for this reason that the more concentrates you can safely feed, the higher your milk yield will be, the more money you will make and the higher your feed efficiency.

## So what should your performance targets be?

The information gathered by Milk Monitor so far has provided us with a unique and unbiased assessment of the current performance of UK dairy farms and has highlighted just how big

the actual range is in terms of UK farm profitability. This is of course to be expected as in any industry but rather than being seen as a problem we should instead view this as an opportunity because if you measure you know where you are, and if you know where you are then you know where you need to be.

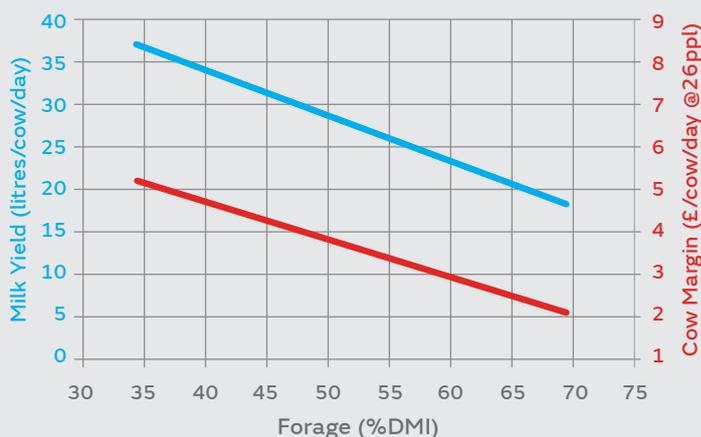


Fig.1 Effect of Forage, as percent of dry matter intake, on milk yield and cow margin in the UK dairy herd. Milk Monitor Figures as of 14/09/17

|  | Average | Top 5% |
|--|---------|--------|
| Milk Yield (litres/cow/day)                | 27.6    | 34.7   |
| Rumen Rate (kg milk/kg DMI)                | 1.29    | 1.55   |
| Butterfat and Protein Efficiency (g/kgDMI) | 97      | 116    |
| Feed Costs (ppl)                           | 13.05p  | 10.99p |
| Cow Margin (£/head/day @ 26ppl)            | £3.60   | £5.13  |

Milk Monitor Figures as of 14/09/17

## Milk Monitor helps to boost yields

Brian Yates at East Logan Farm, Castle Douglas has a 280 cow herd, which are calving all year round and average 35l/cow/day.

Brian Yates' was holding back milk production at East Logan while milk prices fell to as low as 18p/l on his contract.

"When prices picked up to 26p/l we wanted to increase our production by a litre/cow per day," Mr Yates said.

As a Milk Monitor farm Mr Yates worked with Harbro to look at a range of factors that could be improved rather than simply

buy in more energy and protein. The data showed dry matter intakes were fluctuating, causing yields to vary across the herd.

"It seemed we followed a pattern. The mixer wagon was putting out 7t one day, 7.2t the next, and so on until it climbed to 7.5t.

"Then there would be a crash in intakes back to 7t and we would see 500kg left in the trough," he said.

The problem appeared to be the ration mix. Some cows were pulling out the palatable elements of the ration and ignoring other parts.

"To combat the problem we were encouraged to add a total of 12l of water to the mixer wagon along with a small amount of a fat-based product," said Mr Yates.

The effect was the feed was bound together so the cows couldn't pull it apart as easily. Within a week the data showed the extra litre target had been achieved. The herd yield has evened out and the average has climbed from 10,500 litres to above 11,000.

"The extra feed cost was held at about 13p/kg so the added milk yield gave us a healthy extra margin," Mr Yates added.

# COWMAN'S TIPS

**David McCarragher,  
Harbro Dairy Specialist**



With winter not far around the corner, it is time to start thinking about the change in season and about the forage required to complement rations. The following aims to give you a few practical steps to help you understand what your cows are telling you. Spending just 30 minutes every day assessing your cows can tell you a lot about how they are performing.

Manure consistency, cudging rates and behavioural activity can open your thought process to how you can get even more milk from your cows by adjusting something simple that does not involve spending money. Think, look and act can help you understand the environment the cow is housed in either all year round or just for the winter months.

## ASSESSING RUMEN FILL

Rumen fill, is scored on a basis of 1.0-5.0, 1.0 = empty and 5.0 = full. Daily inspections of rumen fill give the manager a snap shot of the rumen and an impression of the current situation on farm. Ideal rumen score differs from dry cows and lactating cows.

- Lactating cows should be 3.0 to 4.0
- Dry cows 4.0 to 5.0

Interpreting the results

- Animals that score low could have problems with lameness or there may not be enough room at the feeding fence.
- Fresh cows with poor rumen fill could be suffering from sub clinical ketosis.
- If there is a lot of variation in the group, assess the ration and availability of feed to cows.

**MANURE CONSISTENCY** gives us a definitive verdict on how the ration has been digested. It's important to evaluate manure in relation to feedstuffs and feed efficiency.

What to look for when assessing,

- Rate of passage. Thin manure and a lot of longer particles indicate too rapid passage. Thick manure with mucus indicates slow passage.
- Degree of digestion. The number of long fibres and identifiable feedstuffs indicate the rate of digestion.

- Variation between cows and between different days, for ideal rumen function the ration should vary as little as possible.
- Colour. Depends on feedstuffs. Light coloured manure often indicates low protein in the feed.
- Smell. Well digested manure is virtually odourless. Ammonia is only produced after mixing with urine.

## CUDDING RATES

Watching cows' cudging gives us as farmers and feed advisors some neat information regarding the ration and rumen health.

- When cows are resting, 80-85% of animals should be cudging at one given time when lying down.
- Looking out for cud balls at the front of cubicles. This can indicate sharp objects in silage and poor palatability of the ration.
- Cows should chew more than 50 times when cudging to represent a well-balanced and healthy diet.

## LOCOMOTION SCORING COWS

This should be carried out at least once a month. Cows can be monitored after they are milked to give us an understanding of how well they are walking. Locomotion is scored from 0-3

- Score 0 means the cow can walk with ease and has even weight spread over all four feet with a flat back.

- Score 3 indicates the cow may be lame due to less weight bearing on one leg, shortened strides and an arched back.

The benefits of the locomotion scoring system include:

- The ability to prioritise cases for treatment.
- Any poor mobility trends can be monitored and the causes identified.
- The provision of figures for benchmarking performance.
- Proactive approach focusing on prevention first.
- An increase in the awareness of herd foot health and farm staff motivation to improve herd mobility.

## PALATABLE WATER AND FEED SUPPLY

Feed that is presented to the cows should be well mixed to reduce the chances of cows sorting. A good water supply should also be available throughout the day.

- Reducing sorting creates a healthier rumen environment.
- Reduction of sub clinical acidosis occurring.
- Clean drinker at least once a week to remove biofilm (slimy layer), to reduce the chance of infection.
- Rapid flowing drinker should be able to dispense 15-20 litres per minute.
- Did you know it takes 6.4litres of water to produce 1 litre of milk?

# MAXAMMON SUCCESS IN NORWAY



TINE SA is Norway's largest producer, exporter and distributor of dairy products with 11,400 members and 9,000 co-operative farms. Its aim is to provide consumers with food that provides a healthier and positive food experience. TINE is one of the oldest dairy co-operatives in Norway and is responsible for more than 90% of Norwegian milk.

TINE has been actively involved in the development of Maxammon in Norway and has helped to fund the Maxammon feeding trials in dairy cows which has been carried out at NMBU (Norwegian University of Life Sciences).

Neil Kidd, Harbro Export Sales Director, explains "TINE monitors the performance of all its co-operative members and has seen the effects of Maxammon on cow performance first hand. The team are currently helping us review the performance of farmers using Maxammon compared with those who have not introduced the system. The initial results are really impressive, the average yield of the Maxammon farms is 9200kg compared with an industry average of 8200kg.

TINE is interested in Maxammon not only for the performance improvement but



also because it allows more Norwegian grain to be fed to dairy cows along with less soya-bean meal. There are import tariffs on raw materials in Norway so making more use of home produced grain is important, also Norwegian society has a strong environmental and ecological focus. However the main thrust behind TINE's interest is the ability to improve the performance of the dairy cow."

**Trials at the Norwegian University of Life Science showed a 3.6% improvement in total digestibility and a significant 4.3% improvement in feed conversion efficiency in dairy cows fed Maxammon grain.**

#### Total Digestibility

|                        |       |
|------------------------|-------|
| Maxammon Treated Grain | 74.3% |
| Untreated Grain        | 71.7% |
| Difference             | +3.6% |

#### Feed Utilisation Efficiency Kg milk per kg feed

|                        |       |
|------------------------|-------|
| Maxammon Treated Grain | 1.45  |
| Untreated Grain        | 1.39  |
| Difference             | +4.3% |

Maxammon treatment improves the digestibility of the fibrous fraction of raw materials by 25 to 30%

This summer has repeated some of the digestibility work and we are currently in discussion about further trials in Norway involving NMBU.

#### **Pre-treated Maxammon grain is available from Harbro.**

If you are interested in utilising Maxammon grain, then now is a good time to assess your requirements and forward order at a fixed price for the winter.

**Contact our Trading Dept. on 01888 545202 to place your order.**

Contact us to find out more about Milk Monitor, Rumen Rate and Maxammon **01888 545200.**