

NUTRITION

Maintaining better rumen function has improved forage utilisation and boosted milk constituents from a simple system. *Dairy Farmer* reports.

Focus on feeding for improved rumen health

In the last 12 months, brothers Richard and James Pratt have increased milk from forage by 1,000 litres/cow and milk solids from 750kg to 806kg/cow from their 140-cow all-year-round calving herd.

The pedigree Studdah herd, at Studdah Farm, near Leyburn, North Yorkshire, averages 10,460 litres at 4.34% fat and 3.37% protein, with milk sold on a cheese contract with Wensleydale Dairy.

The milking herd is split roughly 50:50, with high yielders housed all-year-round, while low yielders graze as long as possible, usually from late March until early November if conditions allow.

A new building for fresh calvers was put up in 2019, and Richard and James saw benefits from improved ventilation and comfort, more space and better cow flow.

Richard says: "We want to keep

the system as simple as possible.

We look to make the best use of the resources we have to maximise the value of our milk contract and central to this is making full use of forage.

"We are currently producing 3,000 litres from forage, but this has increased by 1,000 litres in the last year."

Reseeding

The 89-hectare (220-acre) farm is mainly down to grass with about 8ha (20 acres) per year drilled to spring barley to produce wholecrop and act as a lead into reseeded. The brothers take a minimum of three cuts of grass silage with any additional cuts taken as big bales.

They have been using compact feeding for three years and cows are fed a total mixed ration (TMR), with the diet being put out twice-a-day.

The diet, which is produced and monitored by Jim McRobert,

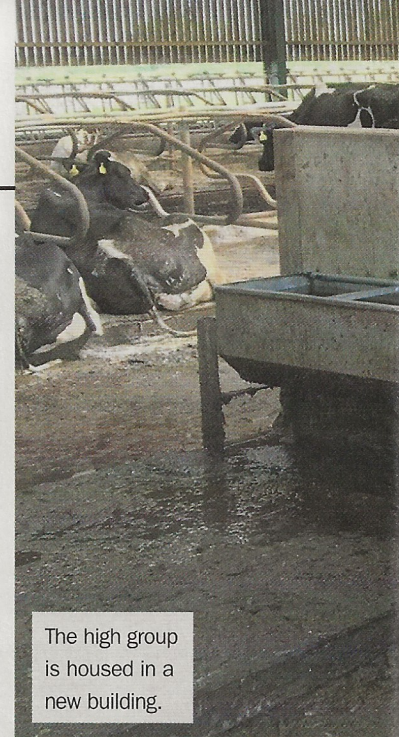
technical manager with Carrs Billington, is based on grass silage, wholecrop, a bespoke blend, minerals and a molasses blend. A rumen buffer is included to ensure good rumen health and help reduce the impact of heat stress in summer.

Wholecrop is fed for about 10 months of the year, as this fits in with the available clamp space and the farming system.

They have considered trying to feed all-year-round, but decided trying to stretch it out would increase the risk of aerobic spoilage.

The blend contains cereals, ground maize, soya hulls, wheatfeed and protected rape and soya. High yielders get 12kg of the blend, while low yielders get 4-5kg. The molasses tank and blend bin sit side-by-side, making filling the TMR feeder quick and efficient.

Jim says: "We try and change the



diet as little as possible throughout the year and within a lactation. The only difference between the high yield and low yield diets is the proportion of grass silage."

Richard and James have been feeding molasses blends in the diet for about 15 years, initially as a way to improve palatability, diet presentation and reduce sorting. But as Jim explains, it is now known it has big benefits in terms of rumen function.

Six-carbon sugars

He says: "Molasses is a great source of sucrose and glucose, which are the important six-carbon sugars. Six-carbon sugars are proven to be more beneficial to dairy cows than the five-carbon sugars found in fermentation co-products, wheat syrup, processed feeds and silages.

"They are more highly rumen fermentable and more effective at improving fibre digestion, they increase microbial protein production and stimulate rumen fungi, which is especially beneficial if there are high NDF and lignin levels in forages as we are seeing this year."

Jim says milk constituents are particularly important to the Richard and James as they look to optimise the contract price. To try and increase milk solids, in June 2020 they decided to swap molasses blends and feed a high energy blend of molasses, glycerine and fermentation co-products.

Glycomol was introduced as a direct replacement for the existing molasses blend at 2kg/cow/day.



From left: Richard Pratt, Jim McRobert and James Pratt.



Molasses research

» New research carried out by ED&F Man at the University of Reading shows feeding molasses blends has a beneficial effect on fibre digestion and protein utilisation.

Cows were fed on diets which contained the same energy and protein levels but with differing levels of a molasses blend.

As the proportion of the

molasses blend was increased, NDF digestibility increased significantly, meaning cows were making better use of forages. Additionally, the trial showed there was an increase in the efficiency of protein utilisation, with more fed nitrogen being retained and less excreted, opening the door to lower crude protein diets.

response, with butterfat increasing from 4.07% to 4.2%, while milk protein increased from 3.18% to 3.3%.

With each extra 0.1% milk protein being worth an extra 0.5ppl, this had a big impact on milk price. At the same time, milk ureas dropped from 291mg/litre to 190mg/litre, indicating that the protein in the diet was being better utilised in the rumen.

Reacting to the better use of pro-

tein, the decision was taken to reduce the protein in the blend from 22.5% to 20%, helping reduce feed costs.

The results from a focus on improving rumen health has been considerable. Substantial improvements in fertility have been made with the herd running at a 381-day calving interval down from 397 days 12 months ago and the 100-day in-calf rate is 54% compared to

46% last year. Fresh calvers are averaging 45-50 litres.

Additionally, in 12 months they have increased yield of fat and protein from 750kg/cow to 806kg/cow through a combination of better constituents and higher yields.

Feed rate per litre has trimmed back from 0.35kg/litre to 0.31kg/litre, feeding over 200kg less per cow and using protein more efficiently. Milk from forage has increased from 2,050 litres/cow to 2,969 litres/cow.

Jim says: "The aim now is to get to 850kg solids per cow and 3,400 litres from forage. Dairy farmers are having to face up to a number of challenges with the reduction in farm payments, generally higher feed prices, environmental pressures and more immediately some variable quality silages.

"Focusing on rumen efficiency to improve forage use and protein efficiency could be a good place to start on farms looking to find ways to balance the challenges they face."

The HealthyLife programme:

Making sustainable dairy farming more profitable

For dairy cows, this means increasing the average milk production per day of life, from birth to culling, otherwise known as their Lifetime Daily Yield.

The HealthyLife programme will increase Lifetime Daily Yield by:



Reducing the age at first calving



Managing the calving interval



Increasing milk production per lactation



Increasing the number of lactations per cow