Drive for feed efficiency puts rumen function in the spotlight

Fine tune their engines

Feed conversion efficiency has a massive impact on dairy herd profitability and, with margins under continuing pressure, optimising rumen function is set to remain a top priority on many units during 2016 and 2017.

text **Nick Tucker**

Managing feeding to minimise acidosis, optimise rumen fermentation and drive forage fibre breakdown is absolutely critical if producers want to improve overall feed efficiency.

So says AB Vista's Derek McIlmoyle, who adds that adjusting rations to minimise the time rumen content spends at low pH is particularly important. "Below pH 5.8, fibre digestion and fermentation efficiency are both compromised as the increased acidity disrupts key microbial populations," he says. "Lower than pH 5.5 and cows are considered to be suffering from sub-acute ruminal acidosis.

"At this point, populations of fibre-digesting microbes are severely reduced," Dr McIlmoyle explains.

"So tackling fundamental issues, such as inadequate fibre or a poor balance between energy and protein, must be a priority.

"If the diet doesn't contain sufficient digestible and structural fibre to balance rapidly fermentable starch and sugars, or enough protein to support maximum microbial growth, then fermentation efficiency will be undermined."

In addition, Dr McIlmoyle recommends that producers limit in-parlour feeding to two kilogrammes per cow per milking to help avoid overloading the rumen with too much starch, as well as switching to a digestible fibre-based concentrate when grazing.

If the risk of sub-acute ruminal acidosis (SARA) is still high, then adding a slow-release lithothamnion-based rumen conditioner can help to maintain a more

AB Vista's Derek McIlmoyle (left) and producer Andrew Reid

stable rumen pH. "The fibre-digestion microbes in the rumen are also very sensitive to oxygen, yet large volumes of oxygen can be mixed in with the feed consumed each day," says Dr McIlmoyle. "This introduces aerobic conditions that are less than ideal, particularly when rations already combine high levels of starch and high D-value forages.

"In situations like this, rumen function will often benefit from a metabolically active live yeast to absorb the excess oxygen and optimise conditions for fibre digestion."

He also stresses the importance of good transition management. This will ensure that the rumen reaches optimum efficiency as quickly as possible after calving. "Just remember that the biggest gains come when all of these strategies are combined to really push rumen performance to its absolute limit," he says. "Together, the individual benefits can add up to make a substantial difference to both overall herd feed efficiency and subsequent profitability."

Fine balance: a consistent nutrient supply is key to optimising rumen function

Reaping rewards

For Northern Ireland-based producer Andrew Reid, optimising rumen fermentation efficiency is an integral part of a feeding strategy that's seen average yields hit 10,000 litres per cow, at 4.11% butterfat and 3.29% protein, on a system using grass as the primary forage.

"The only way to keep yields this high and maintain butterfats is to make sure the rumen spends as much time as possible working as efficiently as possible," he explains. "At this level of production you can't cut corners, and we've found that in addition to paying close attention to the balance of the ration, using a live yeast and slow-release rumen lithothamnion-based conditioner have been absolutely essential. We're also aware of the potential for any mycotoxins in the feed to undermine cow health and performance, so we include a ruminant-specific mycotoxin de-activator as an insurance to help ensure the cows are always working at maximum efficiency."

Based at Laurel Hill Farm, at Lisburn in County Antrim, the 200-cow herd is fed as one group during lactation, with the TMR that's fed all year round providing maintenance plus 36 litres and comprising grass silage, straw, soyabean meal, maize meal and soya hulls.

Nutrition advice is provided by Farmgate Nutrition's Gareth Anderson, who also analyses silages monthly to ensure rations can be quickly adjusted to maintain a consistent nutrient supply to the cows.

Finely tuned

Together with Mr Reid, his father Nelson and two full-time employees, he has steadily fine-tuned the herd's nutrition to optimise rumen function and feed efficiency.

"We also put a lot of focus on the dry cows – I believe that good transition management is key to producing a 10,000-litre cow," says Mr Reid. "Dry cows are fed a high volume and low energy density ration formulated to optimise the rumen ready for lactation. It includes the yeast and mycotoxin de-activator to ensure conditions in the rumen are already as stable and efficient as possible when we need the cow to perform post-calving."

To keep potassium levels low and minimise milk fever problems, haylage for the dry cows is made from pastures that receive no slurry. There's been just one case of milk fever in the past two years, and the number of displaced abomasums is down to just three per 250 calvings.

"Our strategy is to be more efficient before we push for expansion. So we'll push for better yields before increasing cow numbers, while also improving fertility and keeping on top of health problems.

"We've invested in genetics to breed cows that are capable of producing 10,000 litres and above, so why not invest a little more in the feeds and supplements needed for the herd to deliver that performance? Getting the nutrition wrong for higher genetic merit cows by cutting corners will cost us much more in the long run." |