
PRESS ARTICLE**CAREFUL RATION MANAGEMENT THE KEY TO GETTING THE MOST OUT OF THIS WINTER'S FORAGES**

Although early reports from the southern half of the UK suggested that this year's grass silages were of generally good quality, the situation in Scotland has turned out to be quite different. Difficult weather conditions in early summer have resulted in variable quality silages with a generally lower feed value than normal, though perhaps not as dire as some reports had first suggested.

"Those poorer quality grass silages tend to be acidic, low in dry matter and with low palatability," states Dr Nicola Walker, AB Vista's Ruminant Product Development Manager. "There's also the temptation to make up for the low silage energy content by feeding more cheap cereals, but that will only increase the already high risk of acidosis and damage feed conversion efficiency.

"Managing feeding to minimise the acidosis risk and optimise breakdown of forage fibre in the rumen is the key to getting the maximum performance out of this year's forages, and that's going to be extremely important if additional feed costs are to be kept under control."

Adjusting ration formulations 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 rumen microbial populations are adversely affected by the acidity. Below pH 5.5 is considered to be the threshold for sub-acute ruminal acidosis (SARA).

"At this point, populations of fibre-digesting microbes are severely reduced," Dr Walker explains. "So don't overload the rumen with too much starch, particularly if silages are acidic, and consider using a high quality slow-release rumen conditioner if the risk of SARA is high.

"The fibre-digesting microbes are not only affected by low pH, they are also very sensitive to small trace amounts of oxygen, so any rations containing higher D-value

silages alongside high levels of starch are also likely to benefit from a metabolically active yeast like Vistacell to keep oxygen levels low and improve fibre digestion."

In fact, research has shown that using a yeast and rumen conditioner together rather than just yeast on its own can produce similar milk yield and more butterfat for less dry matter intake – a clear indication that feed efficiency was improved (see *Table 1*).

Table 1 – Effect on milk production and feed efficiency in lactating cows fed a 65:35 forage-to-concentrate ration diet (Source: Schothorst Feed Research, 2014)

	Control	Yeast only ¹	Yeast plus conditioner ²
Dry matter intake (kg/day)	23.4	24.2	23.6
Fat-corrected milk yield (FCM, kg/day)	37.1	38.6	38.9
Butterfat production (kg/day)	1.46	1.58	1.65
Feed efficiency (kg FCM/ kg DMI)	1.59	1.60	1.65

¹ Vistacell metabolically active yeast at 4g/cow/day

² Vistacell AB = Vistacell at 4g/cow/d + Acid Buf slow-release rumen conditioner at 80g/cow/day + 8g limestone

Maintaining a steady, balanced supply of nutrients to the rumen is another critical factor if forage fermentation is to be optimised. This nutrient supply can be disrupted on a daily basis by the variation in silage quality that occurs throughout each silage clamp.

For example, data generated last winter using NIR4 Farm (a portable spectrometer that allows on-farm analysis of multiple forage samples) showed silage dry matter (DM) varied by up to 10% across even a single clamp face.

"Even a 2.5% reduction in silage DM will cut DM intake by around 1kg – worth as much as 2 litres/cow/day – and lower overall fermentation efficiency by upsetting the rumen microbes," Dr Walker highlights. "Silages therefore need to be analysed and rations re-formulated much more regularly than currently happens on many dairy units, at least monthly.

"Fortunately, it's now possible to use a hand-held NIR unit to analyse silage feed quality weekly, or even daily, and adjust silage volumes to compensate. The net result is much greater control over nutrient supply to the cow and, ultimately, feed costs."

According to Dr Walker, it's also worth considering a forage pre-treatment, which can both improve the feed value of low quality silages and reduce feed value variation. Added to the ration before feeding to speed colonisation by rumen microbes, this can improve silage feed value and increase feed efficiency by as much as 11%, worth up to 2 litres/cow/day.

Since the effect is greatest in lower quality forages, the result is also a more consistent feed value, leading to a further improvement in rumen fermentation efficiency.

"But the biggest effects come when all of these strategies are combined to really push fibre digestion in the rumen to its absolute limit. That's when you'll see the biggest gains in converting forage into milk, and in keeping overall feed costs to a minimum this winter."

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