
PRESS ARTICLE**MAXIMISE FIBRE DIGESTION TO UNLOCK FULL BEEF RATION POTENTIAL**

For beef units feeding silage- or moist feed-based rations, extracting as much growth as possible from the fibre in the diet is the key to both minimising feed costs and maximising margins, claims Dr Nicola Walker, AB Vista's ruminant product development manager.

"Fibre is an extremely important energy source in ruminant diets, as well as being vital for correct rumen function," she highlights. "Feeds high in fibre like silage and moist feeds are also some of the most cost-effective sources of energy available, so it makes sense to utilise them as efficiently as possible."

In silage-based beef systems, for example, preserved forages can routinely account for 60-70% of the ration. The result is a total fibre content that's typically 40-50% of the dry matter (DM) consumed, and potentially even greater this winter due to the higher fibre grass silages filling many clamps.

"If the digestibility of this fibre isn't maximised, then a good proportion of the best value energy in the diet can easily be lost, with knock-on effects for growth rates, feed costs and overall profitability," Dr Walker adds.

Improving fibre digestion in the rumen should therefore be a top priority for all beef producers. The rumen digestibility of plant cell walls – the main source of fibre in the diet – can be as high as 65% under ideal conditions, but it can quickly drop to as low as 35% if the rumen environment isn't optimised.

"The amount of fibre that's actually broken down and converted into energy by rumen microbes is determined by two key factors: the potential maximum digestibility of the fibre and how well the rumen is functioning," Dr Walker explains.

"So anything that compromises fermentation efficiency in the rumen is going to limit fibre digestibility and the resulting energy supply, regardless of how much available energy the fibre might potentially contain."

Low rumen pH (acidosis) caused by acidic silages or too much unbalanced starch in the ration will reduce the populations of fibre digesting microbes and slow the rate of fibre breakdown. Increased rumen outflow rates following addition of sodium bicarbonate can limit the time available for digestion, whilst excess oil in the diet will coat the fibre, delaying microbial attachment and colonisation.

“All are factors capable of restricting fibre digestibility, undermining overall feed efficiency and reducing profitability,” continues Dr Walker. “It means that minimising or avoiding these factors needs to be a priority if you want to extract as much growth as possible from forage and fibre.”

Recent research has shown that increasing the speed at which rumen microbes colonise the fibre in the diet, for example, can improve feed conversion efficiency by 10%. This increased average daily gain by 60-70 g/day, equivalent to an extra 4kg in just two months.

“This particular trial used a *Trichoderma reesei*-derived fungal extract applied as a fibre pre-treatment before feeding, which roughened and created pits in the surface of the fibre,” Dr Walker continues. “The result was a substantial improvement in fibre digestibility, and highlights just how much additional potential there is available if fibre digestion can be truly optimised.”

As a result, Dr Walker is urging beef producers to examine all aspects of the ration as part of an ongoing process, continually fine tuning nutrient supply and the rumen environment to optimise fibre digestion. Ensure a balance between the rapid energy release from starch and more slowly fermented digestible fibre, for example, and consider the use of a slow-release rumen conditioner if silages are also acidic and the risk of acidosis is high.

“In addition, make sure you include enough structural fibre to stimulate rumination and provide the rumen ‘mat’ that helps retain feed in the rumen until digested,” she concludes. “

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