

At every stage of lactation rumen capabilities must be monitored

Future Herd offers lessons in rumen efficiency

Northern Ireland-based Greenmount College's dairy herd is maximising rumen efficiency and achieving forage dry matter intakes of more than 15kg, with an average yield of 8,100 litres of milk, at 4.34% butterfat and 3.41% protein.

text Allison Matthews

What rumen efficiency rules is the dairy team at Greenmount College, in Northern Ireland, following to get the most from its herd? The college's 'Future Herd' is maximising rumen efficiency to achieve forage dry matter intakes of more than 15kg. Greenmount's dairy technologist Mark Scott explains how the emphasis is

	first cut	third cut	whole crop wheat
dry matter (%)	41	39	58
crude protein (%)	15,6	13,3	8,2
ME (MJ kg/DM)	12,3	11,7	10,3
starch (%)	—	—	33,8
intake value	115	108	—

Table 1: The Future Herd's forage analysis

placed on maximising the potential from forage, starting with the transition cow diet before the cow calves. "Transition on to the milking cow ration begins two weeks prior to calving. When intakes are suppressed, a higher density diet is required to maintain condition and calf development. A total of 9.5kg of TMR dry matter provides sufficient



Rations must be balanced with forage to ensure optimum rumen efficiency

nutrients to meet the cow's needs." Post calving, when the energy demands of the cow rise dramatically, producers may feel the need to fill the diet with an energy dense feed. Excessive concentrate feeding during this transition period can cause metabolic problems, such as displaced abomasums and acidosis.

"If good quality forage is available, forage intakes need to be maximised to enhance the profitability of dairy herds across the UK," says Thompsons Feeds' ruminant specialist Stephen Agnew. "The Future Herd is achieving forage dry matter intakes of 13.5kg, 15.1kg and 15.5kg for the early-lactation, stale and high-yielding groups respectively. This is in contrast to many units across the UK, which may be finding it hard to achieve forage dry matter intakes of more than 10kg."

High intakes

According to Mr Scott, the main reason for these high levels of forage dry matter intakes can be attributed to early lactation management and high quality forage. "After calving, cows in the Future Herd enter the early lactation group where they are fed 3kg of concentrate within a grass silage and whole crop wheat TMR. Concentrate is then built up through the parlour from 2kg on day one to 7kg at day 21. Cows then migrate into the high-yielding batch when they are 30 days in milk and achieving a daily yield of 30 litres.

"The cow should remain on a minimum feed rate until past peak yield and she's either cycling regularly or back in calf. Therefore, depending on fertility performance, a minimum feed rate may be in place for anything from 60 to 100 days. At this point the ration should then be balanced to maximise yield. When the herd is fed to yield, concentrates will not be wasted

by overfeeding lower yielding cows." At Greenmount the milk production potential of the herd is reviewed on a monthly basis and parlour settings are adjusted accordingly to ensure that the rumen is utilised to its potential.

Key lessons

For individual producers it may not be easy to achieve these targets set by the Greenmount herd but, as Mr Agnew explains, there are practical steps that all producers could take.

"The aim should be to replicate the performance achieved from forage by the Future Herd. A feed rate of 0.26kg of concentrate per litre of milk produced demonstrates what can be done with top quality forage when the ration is balanced to optimise rumen efficiency."

"When working with poor quality low D-value forage, rumen bugs require large amounts of rapidly fermentable carbohydrate to stimulate microbial activity in the rumen.

"When these micro-organisms are working efficiently, forage fibre digestion will be improved. Feeding a concentrate high in wheat or barley is ideal for this type of forage.

"Alternatively good quality high D-value forage – more than 70 – will require slowly fermentable carbohydrate to slow down the rate of passage through the cow. This ultimately improves nutrient absorption, allowing the cow to take the most out of the forage available."

With the rumen acting as the control room for the rest of the digestive system, it is vital that rations are balanced to improve feed rate per litre.

"With rising production costs it is vital this winter that rations deliver rumen efficiency and producers focus on forage utilisation. Feeding systems must ensure that rumen micro-organisms can operate at an efficient level," adds Mr Agnew. |



The Future Herd is seeing dry matter intakes of 15.5kg