

Improving the rumen function of grazing cows can yield benefits

SARA in the summertime





Stephen Agnew: "Digestion of grass can push rumen pH to a critical level"



Finbar Mulligan: "Carbohydrates in lush spring grass digest rapidly"

Research has shown that cows at grass can display the symptoms of a sub-acute acidosis, a condition usually linked to high starch levels in winter rations. The good news is that there are solutions to the problem during the grazing season.

text **Allison Matthews**

Sub-acute rumen acidosis is typically associated with winter feeding. But research has shown that it can be a summer issue. Previous studies have shown that small fluctuations in rumen pH can have an impact on performance, but all the data is based on cows in housed conditions and consuming winter rations.

"A drop in the efficiency of digestion by just 1% can reduce the energy available for milk production which is the equivalent to a drop in milk of 0.5 litres," says University College Dublin's lead researcher Finbar Mulligan.

"As producers strive to provide diets that support higher levels of performance all year, it became clear to our researchers that there was a need to identify what could be done about SARA when cows are out at grass."

Acid loading

Dr Mulligan's team and UCD's Denise Rafferty wanted to take previous work to the next level to produce a benchmark for SARA over a 365-day period, rather than just during the winter.

"Starch is clearly not the only driver of acidosis. Other rapidly fermented feeds such as grazed grass, which is high in sugar, can also increase the acid loading within the rumen," explains Dr Mulligan.

Miss Rafferty adds that SARA can be difficult to diagnose and many producers do not realise that the problem exists at

grass. "Some of the tell-tale signs in grazing cows include low milk fat percentage, diarrhoea, a loss of body condition, and possibly otherwise unexplained laminitis.

"Summer diets, based on grazed grass, contain large amounts of readily available energy and protein and also low levels of fibre to slow down the digestive process. Carbohydrates in lush spring grass digest rapidly and acids are produced much faster than the digestive system can process. So there's an upward spike in rumen acid load."

Rumen bolus

Dr Mulligan and Miss Rafferty explored the prevalence of SARA in the college herd using pH data loggers. The trial was conducted during the summer of 2012 on a large number of high-yielding spring-calving cows at UCD. During this time a rumen bolus was used to record pH every ten minutes creating 144 data points every day.

A new rumen enhancement product was fed to half of the group to identify how the digestion of grazing cows could be influenced or even improved. During this experimental period the milk yield and components of the herd were recorded to determine the impact of the trial on actual output.

The results of this study have been published and there is a clear benefit to acknowledging the impact of SARA on cows at grass.

"The results indicated that the cows fed the rumen enhancement product had higher rumen pH and a significant increase in milk yield and milk solids. This equated to an increase of 4% fat-corrected milk or, in other words, a rise in yield of 1.8 litres or 7%," he says.

Producers often question the significance of low rumen pH in the grazing animal, but this research highlights how the use of a product designed to improve rumen function actually enhanced the overall performance of cows at grass in a difficult grazing season.

Thompsons' ruminant specialist Stephen Agnew acknowledges the difficulty producers can face when determining if SARA is the real cause of problems at grass, but explains how the work done at UCD can only clarify the situation.

"The data from the trial clearly shows the rumen pH falling below six for substantial periods of time and this shows that the digestion of grass can push rumen pH to a critical level."

"As the promise of better weather approaches producers are looking forward to significant grass growth to both reduce input costs and ease the burden of dwindling silage stocks. While this will be welcomed, producers may be forced to make use of the grazing opportunities on lush spring grass.

"In these circumstances producers must take into account the research from UCD allowing for sizeable fluctuations in rumen pH," warns Mr Agnew.

"In terms of concentrate type, the key is to slow down the flow rate of lush spring grass through the rumen by feeding high levels of digestible fibre from sources such as sugar beet pulp and soya hulls. Maize is also a more slowly fermentable source of starch, as opposed to wheat and barley that will further speed up rumen fermentation."

Practical steps

The way producers view the potential yields from grazed grass may be influenced by the research work from UCD and practical steps can be taken to ensure that the herds' potential is achieved. "We must be willing to challenge the ability of grass but remain realistic about what it is achieving," adds Mr Agnew.

"It is essential that grass covers are continually assessed and managed with the difference between good and poor grazing equating to a variance of five or maybe even six litres of milk." |