Diet 'alkalisation' unlocks maximum milk output potential

Modern, high genetic merit dairy cows are like fine-tuned Olympic athletes when it comes to milk output potential, but often practical on farm issues limit the delivery of optimum performance, according to consultant Rob Cockroft.

Dairy farmers face a myriad of challenges if they are to get their cows performing to their maximum potential with breeding, nutrition, environment and milking routine all interacting to influence the final result. But one of the key difficulties for the industry is creating high performance diets that allow these prolific milk producers to reach their output potential without compromising optimum rumen function and causing acidosis.

Recent studies with dairy units that have made the switch to robotic milking – with the associated feed intake, milking and cow rumination data collection benefits from robots – show that we really can feed high yielding cows more effectively.

Consultant Rob Cockroft from Cow Talk Ltd specialises in dairy cow production systems and nutrition. Using an advanced rationing and nutrition programme from pH6+, he's been working with a number of robotic milkers with excellent results; drawing also on input from FiveF Alka Ltd, the company behind the alkaline-based preservation of cereal feed crops.

In late August 2014 Chris Drake from Headley Hall Farm near Bradford in West Yorkshire was feeding good quality second cut clamp silage at around 35% dry matter to high yielders in his 70-cow, all year round calving Holstein Friesian herd. Cows were averaging 31 litres a day and quite content. However, in early September last year, the cows needed to move onto much wetter, more acidic first cut material that was also a MJ lower in energy.

Consultant Rob Cockroft (left) in discussion with Chris Drake.

"The lower forage quality and prospect of a more acidic diet meant the threat of a fall away in performance was very real unless we fed higher levels of supplement, boosting ration starch and sugar levels particularly. However, maintaining a high output ration without causing acidosis was the challenge and the pH6+ programme suggested the risk of digestive upset was very high. The only solution was to alkalise the diet to deliver the nutrition the cows required," Mr Cockroft says.

The first step was to add AlkabupHa to the mixed diet. "When added to damp forage sources, this alkalising complementary compound feed product rapidly releases ammonia. Its formulation ensures excess acids in the diet are quickly turned into ammonium salts, which are then metabolised as a highly effective rumen degradable energy and protein source. This improves rumen function, as well as helping to reduce the requirement for high protein feed ingredients like soya and rape meal."

In the early autumn Mr Cockroft was able to boost the ration starch and concentrate level – and the rumen pH still further – by introducing Alkanuts, fed 50:50 with the pellets Mr Drake was already feeding through the robot feeders.

Robotic feed data

"Data from the robot feeders showed that the cows were cudding well despite the increased concentrate intake, so much so that in July we were able to increase the Alkanut intake still further. Mr Drake commented that rumination time really shot up soon after we introduced the

AlkabupHa and this showed how content the cows were with the alkalised ration," says Rob Cockroft.

According to data from the robots, cows were spending an average of 390 to 410 minutes a day cudding before the ration was alkalised. After alkalisation this increased to 430 to 470 minutes per day, despite virtually doubling the starch level, reducing the forage to concentrate ratio and feeding more cake per robot visit.

"The alkalisation of the diet was tremendously effective throughout the period when we had to feed the wet, acidic silage and shows just what can be achieved by this rationing approach. Milk stayed within the target range of 28.5 to 30.5 litres per cow, whilst milk butterfat and protein actually rose slightly – another indication of the excellent nutritional status of the animals. Cow fertility and condition also remained good.

"What's great about robot milking systems is that we can access so much data now on how well the cows are performing. And on Mr Drake's farm the data show the cows are happy on their ration, milking to maximum potential and in excellent health. You can see it with your own eyes too and its very rewarding when things do come together so well," Mr Cockroft says.

"Often it is us that prevent the cows producing the milk they have been bred to yield.

In fact, who knows what the potential of a modern dairy cow is, but in my experience you certainly get a lot closer to achieving it when milking with robots," he adds.

Robotic milking has allowed Chris Drake to get more from his herd and closely monitor performance.

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