

Rumen Function - Acidosis Winter 2010

Background

This year's first cut silages produced low yields of young immature crops following a cold and late spring. Consequently many silages being fed now are leafy and lacking structural fibre. Maize silage on the whole is feeding out with generally good starch levels of around 30%. With the high cost of purchased concentrates, home grown cereals are being fully utilised through grain feeding or as whole crop. With the open autumn combined with substantial amounts of fresh grass available, winter diets on many dairy farms are still relatively new for this season and its only over the last few weeks that proper evaluation of cow and diet performance has been able to take place.

On many farms the physical nature of the TMR, especially where precision chopping has taken place, shows evidence of a lack of structural fibre, add to this the leafy 1st cuts and many TMR's are not providing the rumen with enough fibrous material to allow efficient function. With high starch maize silage and cereals being fed many diets are supplying 20% starch (DM) very quickly from these two feeds alone and before any extra concentrates are factored in. Barrier fed TMR's also show classic signs of ration sorting. When inspecting cows, dirty back ends, tail swishing and low cudging rates are further evidence that all is not well. Manure inconsistency is evident and closer scrutiny in many cases clearly shows poor fibre digestion. These scenarios can also be coupled with low butterfats. A position is being presented on many dairy farms to a larger or lesser degree.

Solutions to consider:

Besides considering the addition of buffers such as sodium bicarbonate or yeasts, always ensure lactating cows have free choice rock salt to increase the buffering effect of salivation and then consider the macro diet elements more carefully. The addition of straw, even where whole crop is included, will generally improve the structure of the ration and allow internal rumen physical characteristics to be optimised.

Assessing the level of carbohydrate supply in the ration from cereals, concentrates, etc should be carried out. Replacing some of the starch with sugar will alter the fermentation profile in the rumen. The target in acidotic type conditions is to reduce Lactic acid production and increase VFA's. We know that the end products of sugar fermentation are Butyrate and Acetate, these acids will not depress rumen pH as low as Lactic and will therefore allow cellulolytic bacteria to thrive in the higher pH conditions and kick start fibre digestion. The addition of a sweet tasting high energy liquid will compliment the straw and the ration by improving its palatability and maintain overall energy density.

In conclusion

By addressing physical rumen needs for structural fibre plus rumen flora requirements for a stable pH with a balanced supply of carbohydrates from more than one source should be the first 'stop' to address rumen function. The availability of 'staple' elements such as salt and water for effective rumination and cudging need confirming. The inclusion of micro buffers should be considered to ensure that high yielding dairy cows have all the support we can offer to manage high energy rations.

QLF liquid feeds offer a cost effective way of including sugars at optimum levels, with minimum physical handling and should help reduce ration sorting.

T: 01952 727754

E: info@qlf.co.uk

W: www.qlf.co.uk

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