



DN NEWSLETTER

issue 33

When feeding cattle or sheep we must remember we are feeding a ruminant. The ruminant has a system within a system, we must feed the rumen system as well as the animal system.

The ruminant has its own requirement for energy, protein and minerals, but so do the rumen microbes, the microbial population in the rumen that are responsible for the breakdown of the plant material, and these are responsible for producing the majority of the protein that is absorbed in the small intestine to feed the ruminant. Only when the microbe requirements are met can the rumen function optimally and make the best use of the feeds offered. Optimising the rumen ensures the ruminant remains healthy.

Optimal digestion of cellulose (plant material) will only take place if all the microbial requirements are met:

Warmth – rumen microbes function best at 37°C. Heat from fermentation, body heat from the cow/sheep, and insulation of the skin maintain rumen temperature. We need to ensure we are not cooling the rumen too much in the winter with cold water, or over heating with heat stress or a fever.

Water – microbes work best in a soup of water and food. Always ensure water is fresh and CLEAN and freely accessible.

Anaerobic conditions – the microbes work best without oxygen. In a healthy rumen with a good microbial population oxygen will be removed, yeast can help with this. If there is any challenge to the rumen the oxygen levels have a negative effect. The oxygen enters with the food and from the massive blood supply around the rumen.

Mildly acidic pH – the microbial population functions best at a pH of 6.0-7.0 (slightly acidic water). Ensuring a well balanced diet will help maintain the correct rumen pH. Excessive concentrate, especially fed in slugs of feed, will reduce the pH and increase the risk of acidosis. This damages the rumen wall and the microbial population and reduces feed efficiency and utilisation. Home and Dry treated concentrate and grain can help with this as it alkalinises the feed and raises the pH, helping to neutralise the rumen.

Energy – microbes break down cellulose and hemicellulose to produce energy to fuel metabolism. These sugars are converted into volatile fatty acids that are then absorbed through the rumen wall and transported to the liver for metabolism. If the rumen wall is damaged, there are any liver health issues, or the microbial population is not healthy then the animal will not be provided with the energy it requires to grow or perform.

Nitrogen – needed to synthesise proteins. Comes in either degradable dietary protein or non-protein nitrogen sources. A minimum of 1% nitrogen is required in the feed dry matter to break down plant material. The right balance of protein sources is needed to ensure the rumen microbes get their supply to enable them to grow and work before they pass into the intestine as the main source of protein for the ruminant itself. Home and Dry treatment of grain increases the protein content of these feeds and so helps to feed the rumen microbes better and support performance.

Saliva production is a key factor in maintaining rumen health and is stimulated by good rumination and cudging activity. This requires a good level of effective fibre, forage, to be fed in the diet. Cows can produce up to 180 litres saliva per day. Sheep produce over 10 litres of saliva per day. The saliva is made up of sodium, bicarbonate and hydrogen phosphate ions that all work as buffers to neutralise the acids in the rumen.

Ensuring we keep the rumen papillae healthy and the rumen environment ideal for the rumen microbial population will ensure we can get more performance from the feed inputs we provide. We not only improve performance but also the efficiency of that performance. Most of the time it is a case of feeding less feed but with the right balance and ingredients and definitely not feeding more feed.

Home and Dry is a pellet made from feed grade urea, triple S sustainable soya and other feed ingredients for stabilisation. Ammonia is released by enzyme action



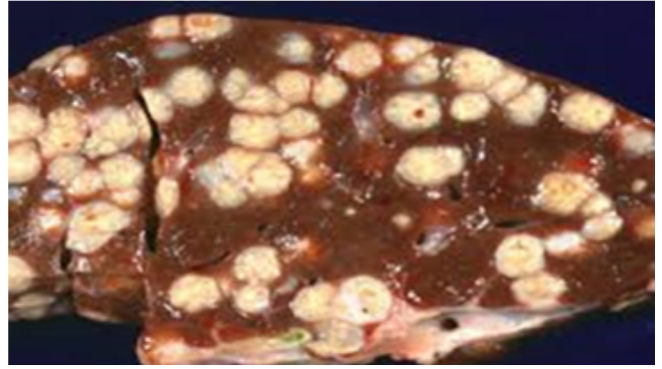
and this then further reacts to produce alkaline ammonium salts, mainly ammonium bicarbonate. This provides an excellent buffer and nitrogen source. Very little urea is left in the final feed if treated correctly. The grain we treat with the pellet needs to be mature but this also ensures we achieve maximum starch and dry matter levels. The end product is a stable and healthy feed source.



When feeding cattle and sheep with Home and Dry treated grain we find we can utilise more silage and feed less cereal, example 5-6kg AlkaBarley 30 as opposed to 7-8kg Rolled Barley, and achieve better growth rates, often averaging 1.8-2kg liveweight gain per day in finishing beef cattle. Other observations we see are more even performance and batches, more settled cattle and less health issues.

Home n' Dry[®]
the foundation of alkasystems technology

In intensive beef systems liver abscess and feet insults can be seen but if we improve the rumen health in these animals with a more balanced diet, often helped by using Home and Dry treated grain, we remove these issues. Carcase grades and then better, reduced loss of offal is seen, and more consistent, reliable performance on farm can be assured.



Pictured Above - Liver Abscessation



Pictured Above - Scarred Rumen Wall



Pictured Above - Healthy Pedal Bone



Pictured Above - Damaged Pedal Bone

Dugdale Nutrition



iFeed 
INTELLIGENT FEEDING by Dugdale Nutrition