

SUGARS FOR SUCCESS

Whether you are finishing beef cattle on a cereal or forage-based system, adding a molasses blend could have a significant impact on performance.

“Sugars are a vital nutrient in all beef rations and are more than just a source of energy,” comments Georgina Chapman, from molasses blend specialists ED&F Man. “They can have a positive impact on rumen health and digestion across all diets.”

She explains that both starch and sugars are fermentable carbohydrate sources. Sugars are rapidly fermentable, providing an immediate energy source for rumen microbes, making sugars a valuable way to improve rumen function.

“It is important to understand that not all sugar sources are the same. The six-carbon sugars found in molasses based liquid feeds are more highly fermentable than the five-carbon sugars found in silages and other liquid feeds that are co-products of fermentation such as pot ale syrup and wheat syrups.

“In addition, as these products have already been fermented they have little effect in the rumen, unlike molasses where the sugars are fermented in the rumen, stimulating microbial activity and growth.”

In forage-based diets, Georgina says that feeding molasses-based liquid feeds to supplement grazing or conserved forages improved the value of the forages, driving dry matter intakes and improving fibre digestibility.

Rapidly fermentable carbohydrates are required by the fibre digesting bacteria in the rumen. Sugars fuel the bacteria, increasing the numbers of bacteria present and the rate at which fibre is digested which releases more nutrients from the feed. In addition, a more rapid fermentation increases rumen throughput and stimulates higher dry matter intakes without risking rumen health.

“On a practical point, with forages molasses-based liquid feeds can help improve palatability and reduce sorting in the diet where concentrates are mixed with forages.

Georgina says there are similar benefits with cereal-based diets. She comments that with barley prices currently attractive making it a cost-effective source of starch and energy, producers may be tempted to feed more.



Georgina Chapman.



However, by doing so they increase the risk of acidosis which can disrupt rumen function and depress intakes, leading to poorer growth rates.

“Starch plays an important role in rumen microbial growth and is commonly included in diets at 18-20% of dry matter. But the fermentation of cereals can change the balance of acids in the rumen, particularly stimulating lactic acid production and predisposing cattle to sub-acute ruminal acidosis (SARA) or acidosis if rumen pH falls below 5.8.

“It is possible to replace some starch in the diet with sugars and reduce the risk of acidosis and improve rumen health. The fermentation of sugar in the rumen leads to an increase in butyric acid which helps maintain a higher rumen pH within the desirable range (pH 6.2-6.8).

Sugars also promote the development of bacterial populations in the rumen which can aid in reducing levels of lactic acid, therefore lowering the overall acid load.”

New research carried out by ED&F Man at the University of Milan investigated the effects of replacing a proportion of starch in the diet of beef cattle with a high sugar molasses based liquid feed. The cattle fed the liquid feed were significantly heavier at the end of the trial with a higher average daily liveweight gain. They also had a higher dry matter intake and superior feed conversion efficiency.

“Even though barley is good value at the moment, replacing a proportion with a molasses based liquid feed such as Economol or Stockmol 20 could improve rumen efficiency for better overall animal performance,” Georgina concludes.

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