A season made for molasses?

Molasses blends could play a potential role this winter in driving production from forage while helping to maintain rumen health.

All the evidence points to most dairy farms entering the winter with clamps full of high quality forage this winter. This raises the prospect of more milk from forage. But Georgina Chapman, technical support manager with ED&F Man warns that diets will need careful balancing to exploit the value of forages and maximise rumen health.

"The focus needs to be on feeding the correct nutrients to effectively balance the silages, not necessarily on feeding the cheapest supplements to keep feed costs down."

Ms Chapman says that the characteristics of this year's grass silages indicate the type of supplementation which will be required. Results from Trouw Nutrition GB show that grass silages this year are generally drier, with higher NDF and lignin contents making the forage more difficult to digest. At the same time they are lower in the rapidly fermentable carbohydrates needed to feed the fibre digesting bacteria, suggesting a requirement for increased starch and sugar in supplements.

"With cereal prices currently low, one option could be to feed more wheat or barley. While certainly providing the rapidly fermentable carbohydrate, there is a potential acidosis risk which will compromise fibre digestion and dry matter intakes.

"This is where molasses blends can fit in by substituting an amount of cereal with a molasses blend increasing the supply of rapidly fermentable carbohydrates with no raised risk of acidosis. They can also help balance the supply of rumen fermentable protein, as well as the low substitution effect of a molasses liquid helping overall DMI.

Molasses may be a supplement worth considering this winter.

"Furthermore with drier silages it can be difficult to keep the TMR within the target dry matter range of 45 to 50%. Using molasses blends in place of cereals can help lower the overall dry matter of the TMR."

She explains molasses is a complex product which contains sugars and numerous organic acids. The sugar fraction, is a blend of different sugars including sucrose and glucose which are the important six carbon sugars.

"Six carbon sugars are proven to be more beneficial to dairy cows than the five carbon sugars found in fermentation co-products, wheat syrup, processed feeds and silages.

"They are more highly rumen fermentable and more effective at improving fibre digestion, increasing microbial protein production and stimulating rumen fungi. Stimulating fibre digestion will be important this year with the high NDF and lignin levels."

Georgina Chapman.

She says cane molasses also has a significant impact on the rate of rumen fermentation. Sugars are rapidly fermented and most will have been fermented within two to three hours of feeding. But trials show that the rumen fermentation remains more active long after the sugars gone.

"By promoting faster and more active fermentation, they will increase rumen throughput and so stimulate dry matter intakes. By raising the sugar levels in the diet to 7% while holding overall starch and sugar at around 28% to 32% we can create a more efficient fermentation without increasing the acidosis risk."

Ms Chapman says this is due to the effect of sugars on volatile fatty acid (VFA) production. VFAs are the fuel for the animal so higher VFA levels will mean the cow has access to more energy.

"Where sugars are fed, we see an increased production of butyrate and reduced acetate output and this reduces the acid load in the rumen because butyrate is a less powerful acid.

"Not only do sugars have a beneficial impact on acid production, but they also help reduce pH by increasing the rate at which acid leaves the rumen by stimulating absorption across the rumen wall. By doing so sugars reduce the total acid content and help maintain a more stable pH within the rumen."

"By increasing fibre digestion and maintaining rumen health, molasses blends can help increase dry matter intakes which will be important to make better use of silage. If we can increase forage dry matter intakes by 1kg DM/day it could be possible to reduce concentrates by 0.85kg DM/day (1kg fresh weight) without impacting on yields."

To optimise rumen fermentation she advises formulating diets to include 6% to 8% sugar in the dry matter with a high proportion of six carbon sugars. Starch content should be 22-30% in cows 20-200 days in milk, falling to 18-27% in cows more than 200 days in milk.

She accepts that in the current market, molasses blends may appear uncompetitive compared to cereals but argues the benefits can be significant. Maintaining a stable rumen and optimising forage intakes and utilisation will help support higher yields, improved milk quality and better fertility.

For an average cow producing 32 litres and being fed 1kg/day of a molasses blend, the extra cost this year will be less than 0.05ppl. Ms Chapman argues that this would be money well spent.