

# Time to take stock and review diets for the winter ahead

Reviewing diets now will help assess how they are performing, enabling farmers to make the most of forages over the rest of winter. British Dairying reports.

With cows now settled onto winter rations and forage stocks confirmed, it's a good time to assess both how well diets are performing and what changes might be needed to ensure forage stocks last and contribute as much as possible.

"Cows crave consistency, so the less often and less severely diets are changed, the better for overall performance," says Georgina Chapman, Nutritionist and Technical Support Manager at ED&F Man.

"So reviewing options earlier will allow smaller changes to be made sooner, rather than more severe changes later in the season." The key is to ensure the correct balance of energy and protein sources to optimise rumen function and help maximise



Georgina Chapman, ED&F Man

fibre digestion, says Georgina. The rumen needs both rapidly and slowly fermentable carbohydrates and proteins. "Many farmers are facing the problem this winter of having to base diets on higher neutral detergent fibre

(NDF) grass silages which are more difficult for the rumen microbes to digest, leading to problems with dry matter intakes and cows not milking as expected. In addition, these forages are low in the rapidly fermentable carbohydrates that the rumen requires."

While it may be tempting to look for alternative, possibly lower-priced carbohydrate sources, it is important to understand how ingredients will perform in the rumen. Products like potato and bakery waste can vary considerably in terms of starch content and degradability, depending on how they have been processed, and may not deliver what the cow needs.

"The key is to provide the appropriate energy sources to stimulate rumen activity without compromising rumen health," says Georgina.

"Molasses can provide a valuable source of fermentable energy to improve fibre digestion. They contain a blend of different sugars including sucrose and glucose, which are important six carbon sugars. These are more beneficial than the five carbon sugars found in fermentation co-products, wheat syrup and processed feeds. They are more rumen


fermentable, increasing microbial protein production and stimulating microbes to improve fibre digestion.


"Specifically, they are a feed source for rumen fungi, which are essential for breaking down the lignin fraction, making fibre more accessible to the fibre digesting bacteria." Promoting faster and more active fermentation will increase rumen throughput and stimulate dry matter intakes (DMI).

### Increased palatability

Furthermore, molasses can increase the palatability of higher fibre silages, boosting intakes, says Georgina. "By raising sugar levels in the diet to 6-8%, while holding overall starch plus sugar at around 28-32%, it is possible to create more efficient fermentation without increasing the acidosis risk. And molasses are competitively priced, with good global supply meaning they can be a stable ingredient in diets."

The table below shows the effect of adding a molasses blend, Molale, to a grass silage diet. Molale is a high energy molasses-based liquid feed, balanced with protein, making it ideal to drive intakes and rumen efficiency. In column one, the original






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kg	Original diet	Relace some barley with molasses	Add molasses as extra ingredient
Grass silage	50	50	50
Barley straw	0.5	0.5	0.5
High energy 18%	4.0	4.0	4.0
EDF Molale	0	1.5	1.5
Barley	2.5	1.5	2.5
Soya hulls	1.5	1.5	1.5
Hipro soya	1.0	1.0	1.0
DMI (kg)	24.0	24.0	24.9
ME (MJ/kg)	293	294	305
Total starch (%)	9.91	7.79	9.55
Total sugar (%)	4.64	6.13	6.0
Total starch and sugar (%)	14.5	13.9	15.6
Yield (litres)	39.7	39.8	41.6
Cost (£/cow per day)	5.26	5.30	5.60



diet is formulated to maintenance (M)+40 litres with no molasses. In column two, adding 1.5kg of Molale allowed 1kg of barley to be removed. The diet is still worth M+40 litres but there are more sugars and less starch, which will improve rumen health and fibre digestion. In column three, adding molasses without substituting other ingredients boosted yield by around two litres/cow per day. This is down to the increase in DMI and nutrient supply.

“Take the time to review how well cows are milking on grass silages and look for signs of poor fibre digestion, including long fibres in the dung, increased sorting of the diet and a drop in milk solids,” says Georgina.

“If necessary, change the diet to improve rumen function and ensure cows get the most from forages.” She also advises doing a forage audit to get a clear picture of remaining stocks. Assessing the freshweight tonnage and getting clamps analysed will allow a more accurate plan to be delivered, she says.

“DM percent determines how much freshweight needs to be fed to meet stock requirements. You will go through a lower DM clamp quicker than one holding high DM forage.

There are plenty of ways to assess DM on-farm, like using a microwave, or get silage analysed every month to see how DM is changing in the clamp. Armed with an updated estimate of forage stocks and details of the stock to be fed, it is possible to budget to the end of winter.

“If stocks are sufficient, including a contingency, the aim must be to supplement forages to maximise their contribution and margins. If, however, stocks are tight, the aim should be to prioritise where silages will deliver the best return or decide how to make stocks stretch further.”

### Straw replacement

One cost-effective option is to consider feeding straw and a molasses blend, says Georgina. This can be used to replace a proportion of grass silage in the diet, or to replace silage totally for heifers and growing cattle.

Products like Regumix, Regupro and PotBlack contain regulated release protein, which releases nitrogen at a steady rate into the rumen to optimise rumen microbial activity. Coupled with a high sugar content, these feeds offer the ideal combination of fermentable metabolisable energy and rumen degradable

TABLE TWO: Straw and molasses can replace silage dry matter

	Grass silage	Straw and molasses blend
Grass silage (kg FW)	10	
Straw (kg FW)		2.2
Regupro 38 (kg FW)		1
DM supplied (kg)	2.5	2.5
Sugars as fed (g)	50	218
Protein as fed (g)	300	305
Energy as fed (MJ)	25	20.5

protein to promote rumen fermentation and activity, and can balance straw effectively, she says.

Table two shows possible ways to reduce 2.5kg of silage DM (around 7-10kg freshweight) in a dairy diet using straw and a molasses blend. Assuming cows were fed 12.5kg DM of silage, moving to 10kg DM of silage and a straw/ molasses blend would mean every four days on the new diet would allow an extra day of winter housing from current silage stocks, explains Georgina. “When implementing a straw-based diet, it is important to provide all animals with good access to a plentiful supply of clean water.” Additionally, the transition from a silage-based diet to

a straw-based one must be controlled, by introducing more straw into the diet and reducing silage steadily over a period of one to two weeks, as this will give the rumen microbes sufficient time to adjust.

“Finally, straw is deficient in minerals so additional mineral supplementation could be necessary,” adds Georgina. “By taking the time now to assess how well cows are milking, calculate forage stocks and review feeding strategies, it will be possible to avoid drastic, enforced changes to diets. This will give cows the consistency they need to keep them milking effectively and turn the current higher milk prices into better margins.”



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