Focus on efficient feeding to improve financial margins

Increasing the efficiency of feed utilisation and reducing feed waste will help improve performance and margins this winter. British Dairying reports.

Feeding cows efficiently this winter will be crucial to make the most of any improvement in milk prices. There are steps that can be taken to drive feed efficiency by looking closely at every stage in the feeding process, according to Georgina Chapman at molasses and liquid feed specialist ED&F Man.

"Feeding efficiently means getting the right feeds to the correct cows in the best form to maximise intakes and drive production, while reducing waste to help control costs. In most cases, with attention to detail it is possible to improve how efficiently forages and other ingredients are used," says Georgina.

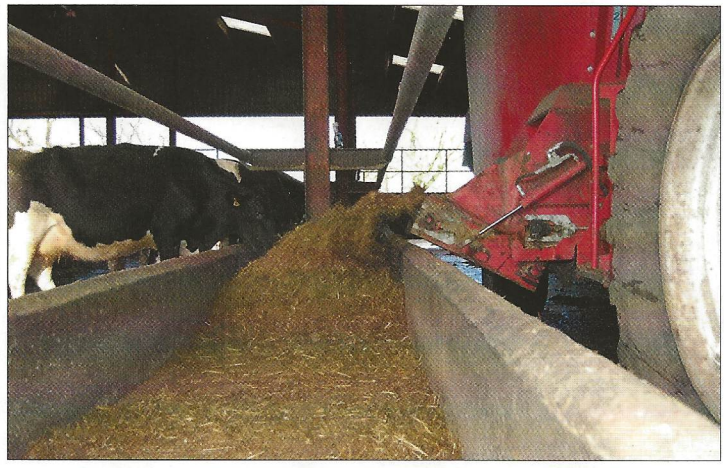
For a farm milking 200 cows/day for 200 days and feeding 22kg of dry matter (DM) per cow/day with 50% forage and 50% concentrates, a total of 440t of forage DM will be fed, which is around 1,500t fresh weight, she says. The diet will also contain 440t of concentrate DM, equivalent to 513t fresh weight.

Small inaccuracies add up

"With those quantities, it is easy to see how small inaccuracies can soon add up to reduce overall physical and financial performance. So it will pay to think carefully about your system - where the pinch points are and what you can do to improve feeding effectiveness this winter."

The easiest starting point is to make sure forages are analysed regularly during the winter to ensure the diet is balanced correctly, says Georgina. All clamps should be analysed at least monthly and whenever the proportion of different cuts in a clamp changes markedly.

Georgina Chapman



Incorrect mixer operation can lead to diet variation along the feed trough

"Your first goal is to maximise the contribution from forages and ensure they are balanced with the most cost-effective purchased feeds. Silage quality, in particular dry matter, will vary throughout the clamp, so ensure you take account of this.

"Our example farm is expecting to feed 11kg DM of silage per cow/day, which at 35% DM requires 31.5kg fresh weight. If dry matter varied by 5% this would mean the dry matter fed per cow changes by 0.55kg. At an average metabolisable energy (ME) of 11MJ/kg DM there is around 6MJ less being fed, equating to a potential loss of around one litre of milk."

Careful balancing

Armed with a reliable analysis, it is possible to formulate a diet to promote good intakes and rumen health to encourage rapid rumen throughput. With this year's high Neutral Detergent Fibre (NDF) silages Georgina predicts diets will need careful balancing to provide the appropriate energy sources to stimulate rumen activity without compromising rumen health.

"Molasses and molasses blends can provide a valuable source of energy to improve fibre digestion. Molasses contain sugars and numerous organic acids," she says.

"The sugar fraction is a blend of different types of sugar including sucrose and glucose, which are the important six carbon sugars. These are proven to be more beneficial to dairy cows than the five carbon sugars found in fermentation co-products, wheat syrup and processed feeds.

Fibre digestion

"They are more highly rumen fermentable, increasing microbial protein production and stimulating rumen microbes to improve fibre digestion," she adds.

Promoting faster and more active fermentation will increase rumen throughput and stimulate dry matter intakes. "By raising the sugar levels in the diet to 6-8% while holding overall starch plus sugar at around 28-32% we can create a more efficient fermentation without increasing the acidosis risk."

The one area where feeding efficiency can be improved on many farms is feed presentation, starting with silage clamp faces, says Georgina. It's important to avoid aerobic spoilage, keep the face tight, move across the face quickly and only unsheet a small amount at a time.

Spoilt and heated silage should not go anywhere near the cows. "Once silage begins to deteriorate it loses feed value and can contaminate the whole Total Mixed Ration (TMR), increasing rejection and reducing nutrient content. Manage the clamps to reduce waste and dispose of any wasted material."

Anyone using a diet mixer should look closely at the feeder operation, as this is an area which will influence how well cows use the ingredients. The feeder wagon should produce the diet required and present it consistently to every cow in the herd to maximise intakes, reduce sorting and minimise the incidence of acidosis. But how often is this checked?

"If a diet is accurately mixed with the right balance of different particle sizes and even distribution of ingredients this will have a big impact on consistency of production, feed efficiency and costs," says Georgina. "Several factors will affect how well a feeder wagon operates and they are all controllable on-farm."

"Once silage begins to deteriorate it loses feed value and can contaminate the whole TMR."

Producers should check the weigh scales regularly, she adds. It's easy to assume the feeder weighs correctly but small errors can affect production. For the example herd of 200 cows fed 22kg DM/day, giving a total of 4,400kg DM/day, a 5% weighing error can be significant.

"If it is overweighing by 5%, cows will receive on average 1.1kg DM less per day which will negatively affect production. In response, it is likely that the diet will be amended unnecessarily. If it is underweighing by 5%, then each day 220kg DM extra will be fed, increasing costs, depleting silage stocks quicker and all for potentially no return.

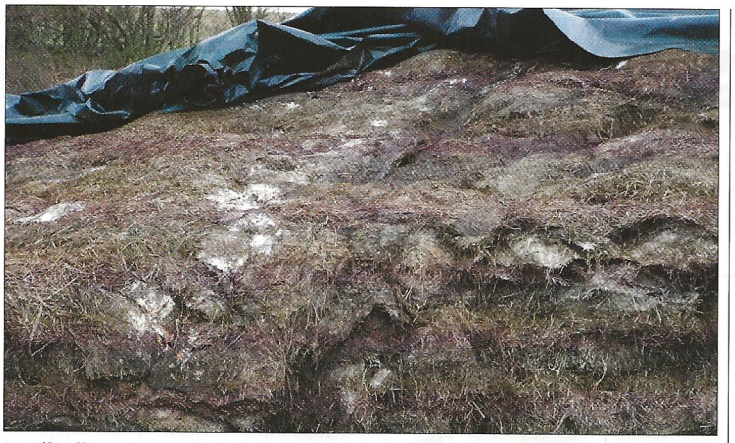
"This winter, checking weigh scales monthly and whenever silage clamps are changed will be a good investment of time," she adds. Keep on top of servicing too. "Make sure knives are regularly replaced and the wagon is working effectively. And anyone operating the wagon must be fully trained in all aspects of feeding and have clear protocols for diet mixing."

Consistent mixing results

It's also important to ensure the wagon is mixing correctly by following the right loading order for the type of wagon, mixing the diet for the appropriate time and never overloading it. This will help ensure the diet is properly and consistently mixed.

"When is the last time you watched the feeder in operation? Watch an entire load as it is filled and mixed," suggests Georgina. "Look for dead spots where ingredients are not being moved and mixed. Their existence is an indicator the diet fed out will not be as intended because it is not being thoroughly mixed.

"Molasses and liquid feeds can play a valuable role in helping ensure an even mix and that often expensive, small inclusion rate ingredients, are properly incorporated." Once the diet is fed out, Georgina recommends walking the length of the feed trough to check the diet looks the same throughout. If all the cows are fighting to eat at one end of the feed trough this is a tell-tale sign of variable mix quality and will lead to inconsistent performance and potentially acidosis.



Spoilt silage can contaminate the whole diet so must never be fed

"Look at the trough before the next feed is put out," says Georgina. "What level of refusal is there? And how is it distributed down the length of the trough? If there is a significant level of feed refusal, there is a reason for this and very often it is heating, particularly if waste silage has found its way into the diet." The quality of a TMR can drop rapidly due to aerobic spoilage. When forage is exposed to the air, the bacteria present begin to grow and ferment the feed. This can occur at the clamp face, or in the feed trough after the TMR has been fed.

Silage heating

"Aerobic spoilage can start as soon as the ration is prepared. The first signs are the ration heating, usually accompanied by distinct odours. When this occurs the most digestible and valuable nutrients, like sugars and amino acids, are lost first. Furthermore, the diet may be less attractive to the cows, potentially depressing dry matter intakes.

"For our example herd, a typical 5% reduction in DM due to heating in the TMR would mean a loss of around 1.1kg DM/cow per day, which could reduce yields by two litres/cow," explains Georgina.

Wasted feed

"If half of the lost DM is from forage, this equates to a 200-cow herd wasting 100kg of forage DM/day, which at an average of 35% DM equates to 285kg/day of fresh silage or 8.5t wasted per month. And the cows will not milk as expected," she adds.

"To help prevent aerobic spoilage consider adding a ration conditioner like Fresh Guard, which has been proven to reduce heating. By reducing undesirable microbial activity, it can increase dry matter intake, improve animal performance and reduce feed wastage," says Georgina.

"Planning ahead and taking steps to maximise feed efficiency this winter will be an important and practical way to help improve margins despite rising feed prices."