



Molasses products represent excellent value and are the most cost-effective source of sugar available to livestock farmers. We have seen a strong growth in sales over the last several years as our ongoing R&D program has highlighted the unique benefits of molasses based feeds in ruminant diets.

Maximising Dry Matter Intakes and improving fibre digestion are key to driving performance. This year we are seeing good silage stocks and overall good quality, so driving the intake of this and stimulating fibre digestion will be a strong feature of this winter's feeding strategy.

Overview of Forage Quality

Research has reported that, with better quality silage and increased stocks this winter, it is possible for farmers to reduce purchased feed costs and improve production from forage.

On average, first cut silages are analysing well. However, there is a big variation in the results and therefore it is critical for each farmer to analyse their clamps in order to create an effective and balanced ration.

Analysis shows that, 2019 grass silage has a higher fibre content than previous years with a higher lignin content. Higher lignin makes the fibre less digestible, which can lead to lower feed intakes and reduced rumen passage rates. This silage will be less fermentable and need to be balanced with rapidly fermentable carbohydrate sources in the ration to improve rumen efficiency.

Reduce 'Sorting' – Add Molasses

The formulation of a balanced TMR can all be in vain if some cows then sort through the ration, selecting out the tastier concentrate portion and leaving the more fibrous components such as silage and straw. With insufficient intakes of effective long fibre, these cows can then suffer sub acute ruminal acidosis. The consequences include low butterfat levels, inefficient feed utilisation, depressed production, loose dung, and production-related diseases such as lameness and ketosis. Also the less dominant animals such as heifers, will not get their share of concentrate feeds and thus consume more high fibre, poorly digestible feeds. The result is animals in poor body condition, with all its associated health problems. The addition of molasses has been shown to reduce sorting. It makes the

meal/concentrate ingredients stick to the forage so it is more difficult for cows to sort out the ration. Secondly, as the ingredients are all coated with molasses, this masks the taste of any unpalatable components, another reason behind sorting.



This ability of molasses to reduce sorting was demonstrated in a trial carried out with the University of Edinburgh's Langhill dairy herd (see fig.1). A TMR consisting of concentrate (a 6mm pellet), brewers grains, whole crop wheat and grass silage was mixed with or without molasses. The difference between the ration at 'put down' and then 24 hours later was assessed using a Penn State Forage Particle Separator. This is a series of sieves with different sized holes, which can be used to separate the diet constituents out by particle size, and so assess the amount of sorting that has occurred.



Fueling the Rumen

Examples of rapidly fermentable carbohydrate sources are ground cereals and molasses based liquid feeds. Sugars are rapidly fermented, and most are utilised within two to three hours of feeding. However, trials show that rumen fermentation remains more active long after the sugars have gone. Additionally, the 6-Carbon sugars present in molasses based liquid feeds are more highly rumen fermentable and more effective at improving fibre digestion.



Later silage cuts are increasing in lignin, and therefore even less digestible, so this fermentable energy supplementation will need to be continued throughout winter to ensure animal performance.

Molasses: Driving Production from Forage

Home grown forages and cereals are the cheapest feed stuff available to farmers and for a profitable winter it is essential to drive dry matter intakes and support efficiency with a healthy rumen.

| | No Liquid Feed | + Molasses Based Liquid Feed | The Effect |
|---------------------------------|----------------|------------------------------|---------------|
| DMI (kg) | 27.7 | 29.1 | +1.4 kg (+5%) |
| Milk Yield (L) | 41.2 | 43.1 | +1.9L (+4.6%) |
| Milk Fat % | 3.81 | 3.92 | +0.11 (+3%) |
| Milk Protein % | 3.36 | 3.35 | No Effect |
| Milk Fat Yield (g/d) | 1550 | 1680 | +130g (+8.4%) |
| Milk Protein Yield (g/d) | 1360 | 1450 | +90g (+6.6%) |
| Sorting | | 25% Less | 25% Reduction |

As highlighted in Trouw Nutrition's report, farmers this year have considerably higher forage stocks with good nutritional value. The key this winter is to exploit this value and drive production from forage. However, with forage appearing to be less digestible, farmers must try to enhance digestibility any way possible. ED&F Man Liquid Products offer the only blends on farm that have been proven to increase fibre digestibility through independent research.

By using a molasses based liquid feed, this will drive DMI, support milk production, increase fibre digestibility, as well as reduce sorting and waste.

More energy from home grown forage and cereal means that there will be less reliance on expensive bought in alternatives, allowing for more production from forage. Increasing forage dry matter intakes by 1kg DM/day could allow for a reduction in concentrates of 0.85kg DM/day without impacting on yields.

Rapidly fermentable carbohydrates are required by the fibre digesting bacteria present in the rumen. First cut silages are lacking in these and sugars are the ideal source. Sugars feed the bacteria providing the energy required to optimise fibre digestibility. Also, by promoting faster and more active fermentation, sugars will increase rumen throughput and stimulate dry matter intakes.

Importance of Sugars

With cereal prices relatively low, many people will be tempted to feed more wheat or barley. However, in doing so, this can increase the risk of acidosis, potentially compromising fibre digestion and dry matter intakes. Starch sources such as wheat and barley, lead to lactic acid production in the rumen, which is ten times more acidic than the other volatile fatty acids produced. While prices are low, it is sensible to feed these ingredients. However, by substituting an amount of starch with a molasses blend, this will increase the supply of rapidly fermentable carbohydrates without the increased risk of acidosis. Sugars will also stimulate the growth of lactic acid utilising bacteria in the rumen. This will have a neutralising effect on rumen pH.

The lower acidosis risk is down to sugars simulating butyric acid production in the rumen. Butyric acid is the least acidic, therefore lowering the overall acid load in the rumen. As well as the benefits on acid production, sugars also help maintain higher average pH by increasing the rate at which the acid leaves the rumen by stimulating absorption across the rumen wall.



Want to know more?
Contact your local merchant or Co-op,
or telephone +353 (0)45481070

www.edfman.ie

