

Forages form the basis of TMR (Total Mixed Rations), but for them to be utilised effectively, a supply of readily fermentable energy such as sugar is also required. Using molasses based liquid feeds in the TMR is the perfect solution.

## 12 Reasons to Feed Molasses Based Liquid Feeds

- 1 Cows need sugar:** For optimum rumen function, cows require around 6-8% sugars in the diet. Most forage and concentrate diets cannot supply this without the addition of sugars. ED&F Man molasses blends provide sugars in the form of sucrose, proven to be the most beneficial to rumen function. Molasses based liquid feeds are the most cost-effective source of sugar available on farm.  
**Benefit: Molasses blends fill the sugar gap and maximise animal performance**
- 2 The Right Sugar:** Sugars are simple carbohydrates; however, research shows that 6-carbon sugars such as sucrose and glucose, contained in molasses, are utilised more efficiently than 5-carbon sugars. 5-carbon sugars found in silages and syrups are less degradable and produce less volatile fatty acids (VFAs) in the rumen. VFAs are the animal's main energy source, providing up to 70% of the animal's total energy requirement. The more produced, the more energy available to the animal for production performance.  
**Benefit: 6-carbon sugars feed the rumen microorganisms promoting greater VFA production**
- 3 Starch:Sugar Balance:** Ensuring an optimal starch:sugar balance is key to maximising animal performance. Research has shown by adding sugar and removing starch this can increase microbial protein yield and optimise the rumen environment. Sugars provide readily available energy to the rumen microbes; this increases the rate of microbial multiplication. Microbial protein is the most important protein source for ruminants and the most economic. Starch can depress microbial protein yield in the first 6 hours of fermentation, whereas sugars are instantly fermented and enhance microbial protein yield. With the right balance of sugar and starch, rumen efficiency can be maximised throughout the day.  
**Benefit: Greater microbial protein yield can help reduce reliance on other bought in alternatives**
- 4 Improved fibre digestion:** ED&F Man molasses based liquid feeds are a source of readily fermentable sugars and they are the only liquid feeds to be proven through independent research to increase fibre digestion. By enhancing the performance from forage, farmers can reduce reliance on other bought in feeds, allowing for cost effective production.  
**Benefit: Get the most from your forage, the lowest cost feed in the ration**
- 5 Optimal ruminal pH:** When the rumen is working optimally it can allow for greater utilisation of nutrients from the ration. Sugars have a positive effect on rumen pH by favouring butyric acid production. Butyric acid is the least acidic of the volatile fatty acids, it also acts as a growth factor for rumen papillae enhancing the ability of the rumen wall to absorb VFAs, reducing the amount of time acids spend in the rumen.  
**Benefit: Maintaining optimal rumen pH is key to improving rumen efficiency and animal health**
- 6 Improved milk quality:** For many farmers it is critical to improve milk quality in order to maximise returns per litre and improve farm profitability. Published data has shown by adding a molasses based liquid feed to the ration, both milk protein and fat levels can be increased by up to 0.1%.  
**Benefit: Achieving higher milk quality can offer premiums on certain milk contracts increasing farm profits**
- 7 Improved palatability boosts intakes:** ED&F Man molasses blends are highly palatable and have been shown to increase Dry Matter Intake (DMI). Encouraging animals to eat more is a key driver of animal production (either milk production or daily live weight gain).  
**Benefit: Increased production and efficiency**
- 8 Reduce ration sorting:** Ration sorting can be a major issue in herds, especially when concentrates form a large percent of the ration, or when less palatable feeds are being fed. Trials have shown that molasses based liquid feeds can reduce sorting by coating all the individual ingredients, making it harder for animals to select specific components. The addition of a molasses based liquid feed also improves palatability with the sugars masking bitter tasting components such as minerals. This eliminates sorting, drives intakes and ensures a consistent ration is consumed.  
**Benefit: Less health problems and more efficient production**
- 9 Low substitution effect:** With high yielding cows, it is difficult to maximise Dry Matter Intake (DMI) when only using dry feed ingredients. Adding an ED&F Man molasses blend to the ration has been shown to increase DMI due to its unique liquid nature and low substitution effect leading to enhanced animal performance.  
**Benefit: Better animal production and better feed efficiency**
- 10 Reduced waste:** It is vital that every kilo of feed grown or bought is consumed and utilised effectively by the animal. It has been proven that mixing a molasses based liquid feed into a TMR not only increases intake but reduces wastage and breathable dust levels. Dustiness can cause health problems to both stock and stockman alike. It can also increase feed wastage and costs as the dust could contain the expensive mineral and vitamin premix that is added to the ration.  
**Benefit: Better animal health, reduced feed wastage and improved performance**
- 11 Convenience and Ease:** ED&F Man can supply storage tanks, in a range of sizes, that enable molasses based liquid feeds to be bought in bulk and stored securely without taking up shed space. The liquid feed can then be simply and cleanly added into the top of the mixer wagon.  
**Benefit: A simple and convenient way to store molasses based liquid feeds**
- 12 Product Flexibility:** ED&F Man offer a range of products that can be used flexibly to get the best from livestock depending on forage availability and ration requirements.  
**Benefit: A tailored solution is available to every farm**

## Fibre Digestion: Getting it right

Silage whether it be grass, maize or wholecrop is the lowest cost nutrient supply available to livestock farmers. Therefore, maximising fibre digestion of home-grown forages is vital for cost effective milk production or live weight gain. By improving fibre digestion this can lead to an increase in microbial protein synthesis and improved rumen health and balance.

The addition of sugar to the ration, whilst maintaining the overall starch and sugar level has been shown to increase fibre digestion (see table). Ideally, the starch to sugar ratio should be between 2:1 to 3:1 for optimal rumen function. This can only be achieved with the addition of sugars to the TMR. Molasses based liquid feeds are the best source of 6-Carbon sugars, and the best choice in terms of ease of use and overall cost effectiveness.

Depending on the base level of sugar in the ration, feeding a product such as Stockmol 20 or Molale can ensure the optimum sugar level, and starch to sugar ratio is achieved.

Sugar (%)	2.6	4.9	7.4
Starch (%)	31.4	29.1	27.5
Sugar + Starch (%)	34	34	34.9
<b>Digestibility %</b>			
Dry Matter	63.6	62.1	65.4
NDF	36.3	36.3	44.6
ADF	42.2	43.4	49.6

Broderick and Radloff 2004



## Trial a storage tank - FOR FREE!

If you are thinking of using molasses for the first time, and you want to see if it works for you and your stock, then ED&F Man offer a tank trial scheme.

In ED&F Man's tank trial scheme, a fully-equipped storage tank is delivered on-farm for two months, you only pay for the product. During this time the beneficial effects of using ED&F Man's molasses products can be assessed. After the two month trial period, you can purchase the tank outright, or spread the payment using ED&F Man's interest free finance scheme. In the unlikely event of seeing no benefits, the tank can be returned at no cost, except that of the product purchased.

These high level tanks are convenient to use, and allow more cost-effective bulk purchases to be made.

Offer may be withdrawn at any time and is subject to terms and conditions.

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