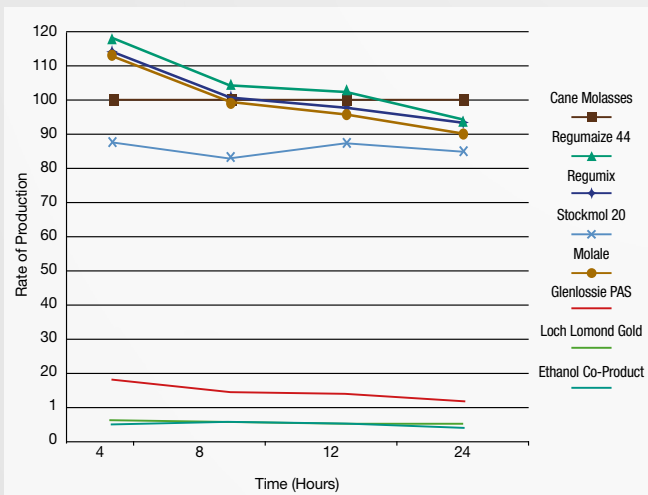


# All liquid products are NOT created equal!

It is important to understand that all liquid feeds are not the same and can vary considerably in their nutritional content. Dry matter (DM) is usually the first figure nutritionists look at. Our cane molasses blends vary from 75% DM for straight molasses to around 60% DM for some of our blends. This compares with typically 20-40% DM for other liquid co-products.

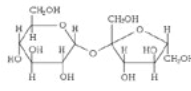

## Liquid Co-products

There are a number of liquid co-products available to UK farmers. These range from the traditional pot ale syrup from the whiskey distilling industry; to wheat derived liquids from the biofuel industry; to whey-based liquids from dairy processing. These liquids have several features in common which are relatively low dry matter (typically 20-40%) when compared to molasses and the low level or absence of sugars. This is mainly due to the sugars being fermented or removed during the process from which the liquid is derived. Due to the co-products having been fermented already, they have little or no effect on rumen activity when fed. Unlike molasses based liquid feeds which are fermented in the rumen, stimulate activity and microbial growth, providing value beyond the calorific content. Additionally, liquid co-products can also be difficult to handle and store due to gelling/viscosity issues or product spoilage.



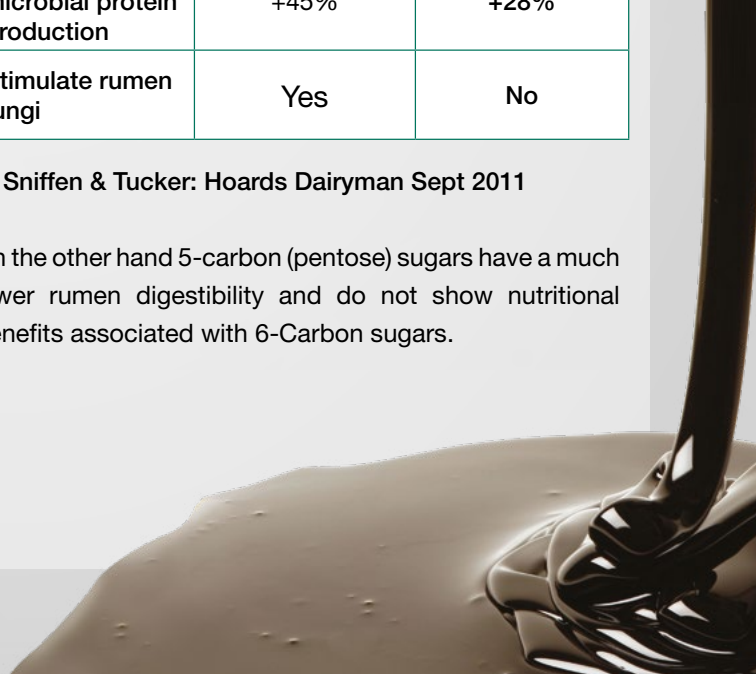
## The Evidence:

Don't take our word for it: Research work\* has shown that 6-Carbon (hexose) sugars have a high level of rumen digestibility and are the key sugars responsible for the positive effects in the rumen such as increased fibre digestion and improved microbial protein production.

	6-Carbon sugars	5-Carbon sugars
Sources	Molasses, grazed grass, SBP	Wheat syrup Fermentation co-products Fermented silage Processed feeds
Structure		
Rumen digestibility	84%	<50%
Improved fibre digestion	Yes	No
Increased microbial protein production	+45%	+28%
Stimulate rumen fungi	Yes	No

\* Sniffen & Tucker: Hoards Dairyman Sept 2011

On the other hand 5-carbon (pentose) sugars have a much lower rumen digestibility and do not show nutritional benefits associated with 6-Carbon sugars.



## Sugars: The hot topic!

“Sugar has now moved from a product used primarily for palatability to a nutrient essential for the maintenance and efficiency of the rumen, which in turn helps livestock producers’ maximise profitability in these tough times.”

Prof Charles Sniffen (Cornell University) 2013

Group	Suggested sugar level %
Close up	5
Early lactation	6
Peak lactation	7
Mid lactation	6
Late lactation	5

Whilst all feeds contain some sugars most purchased feeds contain very low levels. In terms of supplying the desirable 6-Carbon sugars, cane molasses blends offer the most cost effective option available on farm.

### The benefits of using a liquid feed

Using a molasses based liquid feed has been shown to have a number of benefits, both direct nutritional benefits and benefits associated with the physical nature of molasses.

An independent trial\*\* published results highlighting the benefits of including a liquid feed in a dairy ration.

The liquid feed was based on cane molasses.

The trial looked at:-

- Dry matter intake (DMI)
- Milk yield
- Milk quality
- Ration sorting

### The Dilemma!

When milk prices fall, the automatic reaction is to cut costs. This is not the only answer or necessarily the right one. It is important to look at the costs of production and the target milk yield. The more litres that are produced, the lower the ultimate cost per litre. Producing a well balanced high performing diet using high quality ingredients may not be the cheapest way to feed your herd, but it may well be the most profitable!

### The results speak for themselves:

	No liquid feed	+ molasses based liquid feed	The effect
DMI (kg)	27.7	29.1	+1.4 kg (+5%)
Milk Yield	41.2	<b>43.1</b>	+1.9lts (+4.6%)
Milk fat %	3.81	<b>3.92</b>	+0.11 (+3%)
Milk protein %	3.36	<b>3.35</b>	No effect
Milk fat yield (g/d)	1550	<b>1680</b>	+130g (+8.4%)
Milk protein yield (g/d)	1360	<b>1450</b>	+90g (+6.6%)
Sorting		<b>25% less</b>	25% reduction

\*\* DeVries & Gill: Journal of Dairy Science 2012

Given that this trial was carried out on very high yielding cows already consuming high levels of feed it clearly illustrates the benefits of using a liquid feed to increase DMI and improve herd performance.



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