



Food for Thought

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Introduction

There can be no doubt that we are living in tough times. Our predecessors probably thought the same but they could not possibly have imagined their life with so much regulation and living with the consequences of Covid 19!

We will also have to figure out our best approach to the new UK farm subsidy scheme and how we need to develop farming practice. At least it looks like there might be some light at the end of the Covid 19 tunnel so perhaps 2022 will see us returning to a bit more freedom.

Food for Thought

I would like to take this opportunity to share a conversation that I recently had with a business manager for a multinational company. Most of their core business is repeat order driven but gradually those orders evolve into new formulations which embrace better science. That change keeps the momentum in the business running at a good pace.

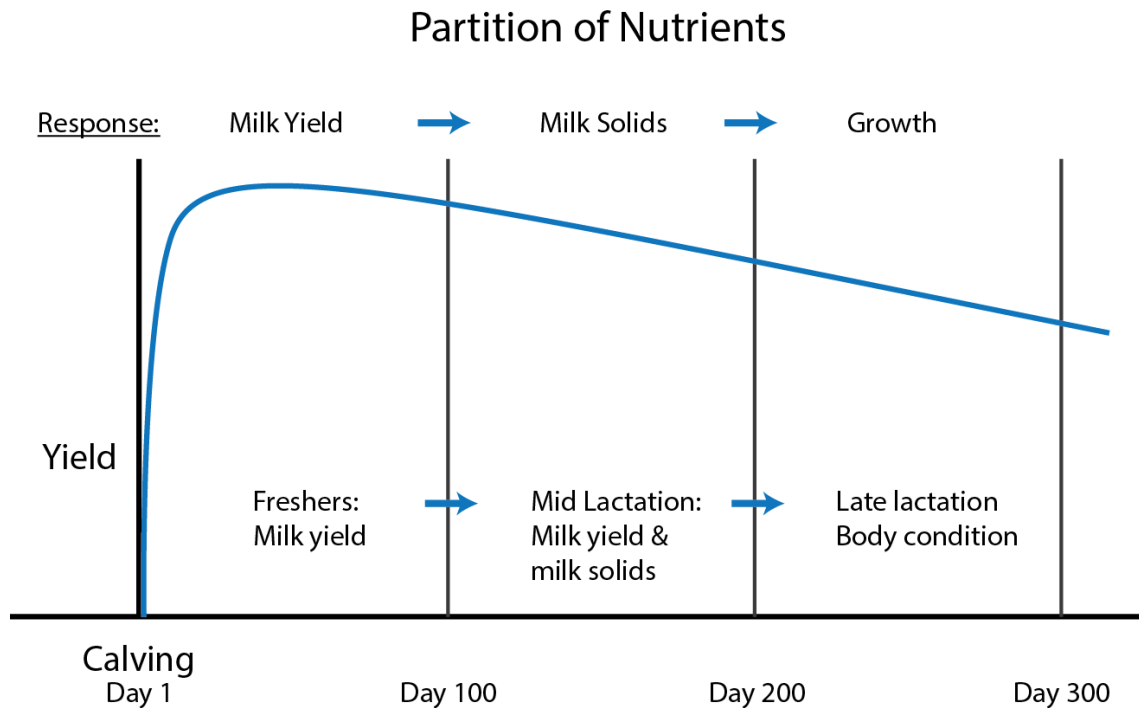
Subtle changes to our industry mean that we just have to keep moving with the times or we get left behind and our businesses become less efficient than the ones that embrace the new approaches. I thought that there was a lot of sense in this philosophy and felt happy that our own drive to innovative and progressive products was more than justified.

My critics will often say that “it’s all in the basics”, and that the “bells and whistles” are not for them. I don’t disagree that we need to get the basics right first. The fact of the matter is that when we look at the investment made in genetics and even more commercial breeding programs, the “basics” aren’t enough to fully exploit that breeding advantage.

So, it’s down to getting the basics done and then carefully looking at which enhancements will yield the biggest benefits.

Optigen® or Smartpro® ? Oregostim® or Crina® **New F1 Yeast** (Spring 2022) or Diamond V®? There is a lot of choice out there but placement of the right product depends on good research. If you are thinking of diving into something new, we can help. Standing back and looking at the big picture before making that choice is always worth while and I make no apology for re-printing a graph that we used in the last newsletter because it shows a rough outline to predict the response of any performance enhancing feed ingredient according to the stage of lactation.

The graph below shows how cows and sheep prioritise the use of their nutrient intakes.



Firstly, the needs for maintenance are met, then the lactating animal prioritises milk production. As the lactation progresses the priority starts to change so that by the end of the lactation, she is concentrating on recovering any weight loss she might have incurred in the earlier part of her lactation. Now the response to the supplement/ additive is much easier to predict!

So, **the key questions are:**

- What is the average days in milk figure for the whole herd?
- Are the cows split into lactation groups?
- How are your dry cows grouped and fed?
- What response are you looking for?

If the average days in milk for the milking herd are more than halfway through the lactation, the yield response will not be so marked but milk quality will benefit more. If the figure is less than halfway through the lactation (Say 150 days) there will be a good yield response. Really, the best way to use the supplement is to target the cows by lactation group.

We could use a similar graph for growing cattle and sheep. We all know that the baby animal needs a much different diet than its adult and that to get the best out of it we will stage the approach to its feeding.

Diatoms

One of mankind's greatest endeavours has to be the brewing and distilling of grain into a wonderful variety of alcoholic drinks!

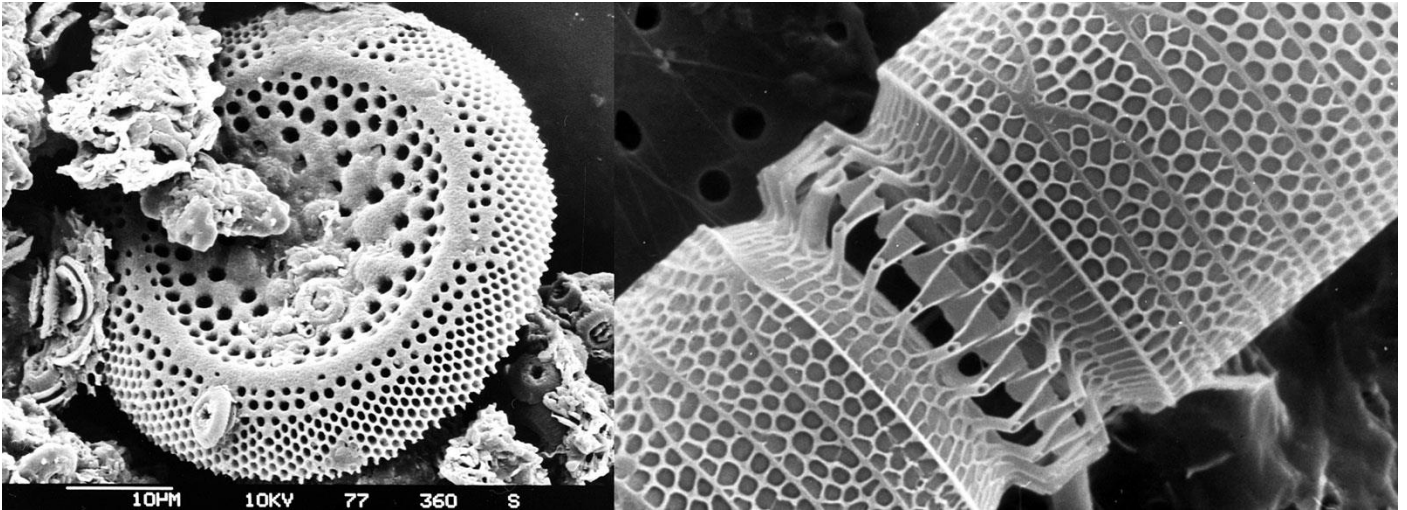
Along time before we started to use mycobinders in livestock nutrition, the brewers were already way ahead of us. They filtered beer to get rid of any sediment but also to eliminate any mycotoxins. After all, if you happened feel ill after consuming enough of the drink it wasn't an option for the brewers that it was down to food poisoning, just too much alcohol!

They were worried about toxins from ergot and moulds that could be present on the grain.

My dad had first-hand experience of this. He was a technical manager for Whitbread and one of his projects was to set up the new brewery in Belgium for the production of Heineken, Stella Artois, and Kronenbourg Lagers.

His remit was to make sure that the bottling lines were fit for purpose, but he also was an expert in beer quality sampling (Not a bad job!). All of the beers were checked for clarity using a visual assessment by passing them in front of a light source. If there was any cloudiness they would be rejected! That is expensive so they were meticulous about the use of their filters.

They used "Diatomaceous Earth" which is basically a clay binder containing billions of marine algae silicon "skeletons" which attract mycotoxins like iron filings to a magnet.



Toxfin XL Dry contains these types of clays and that is the prime reason why it works. It was the first product to get EFSA approval, **Mycosorb A+**, which also contains these clays along with yeast cell wall, was the second.

Both products will absorb mycotoxins really well and I would recommend either of the two depending on the severity of the issue. Check out our website for further details:

<https://lakescot.co.uk/toxfin/>

<https://lakescot.co.uk/mycosorb/>

New F 1 Yeast

The reputation of our **F 1 Yeast Farm Pack** is without equal and to make sure that we offer the best product we are constantly reviewing the research and science surrounding the use of live yeast cultures for ruminants.

Our latest review has come up with some refinements that will enhance the performance of **F 1 Yeast** even more!

Currently we have two versions.

F1 Yeast South which contains a full dose of two different strains of active yeast.

F 1 Yeast North which contains a full dose of one, **Yeasacc ® T S** and an activator based on a dead yeast culture.

It's that dead yeast culture that we have been looking at and now we have found a unique supercharged version that the trials show has significantly improved responses.

We will re-launch the products when we make the change to the new formula. This should happen quite soon but we need to get the initial stock of this ingredient in place first and that could take a couple of months!

Yeast is often misunderstood. There is a big difference between baker's yeast and brewer's yeast.

I was recently sent a couple of before and after photographs of two glass containers. One contained baker's yeast, sugar and warm water. The other contains **F 1 Yeast** sugar and water.

Predictably the bakers yeast quickly started to produce Carbon Dioxide and was climbing out of the glass. The **F 1 Yeast** (an 8% dilution because its on a carrier) didn't really do anything.

The main difference is down to the mode of action: -

- The bakers yeast is selected because it can produce vast amounts of Carbon Dioxide needed to "Aerate" the bread.
- The brewers yeast is anaerobic and is selected for its ability to convert starches and, in the case of **Yeasacc ® TS** also break down fibre cellulose to release sugars for alcohol production.

Alcohol in the rumen is further broken down and metabolised as energy.

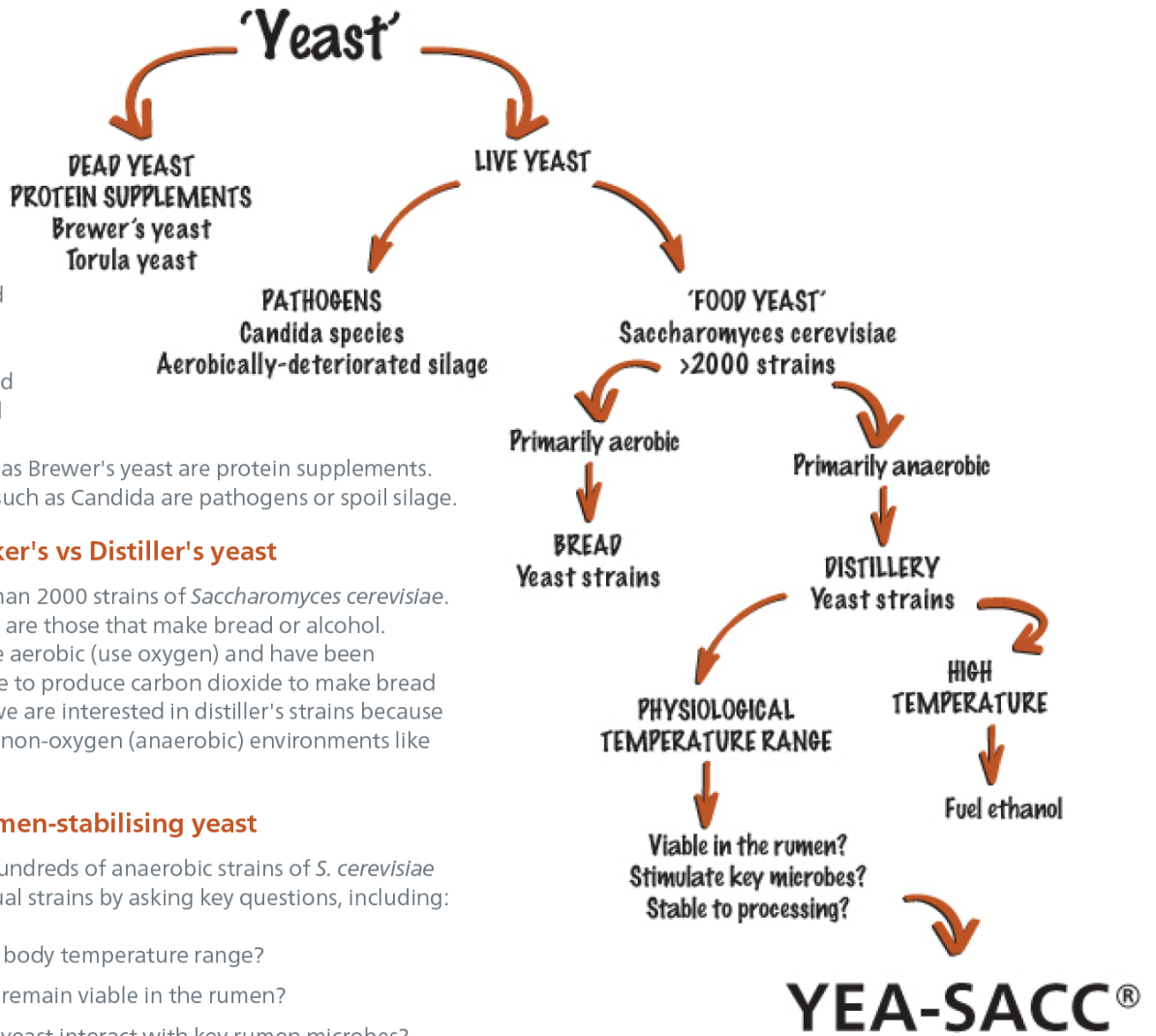
Yeasacc ® TS has many beneficial side effects. Apart from releasing nutrients for the rumen microbes from the forage, it produces peptides (small amino acid chains) that encourage the growth of bacteria that use lactic acid to grow. This helps rumen buffering. It also encourages the growth of cellulolytic and proteolytic rumen microbes.

All in all, it is able to generate extra microbial crude protein (rumen bugs) which is the best food source for the cow!

From Yeast to Yea-Sacc®

Yeast described

The saying 'Not all yeasts are the same' is an understatement. Both live (cultured) yeast and yeast by-products are used in animal feeds. Live yeast like Yea-Sacc® are used in food, feed, and fuel production. By-products such as Brewer's yeast are protein supplements. Other yeasts are such as Candida are pathogens or spoil silage.



Live yeast: Baker's vs Distiller's yeast

There are more than 2000 strains of *Saccharomyces cerevisiae*. The most familiar are those that make bread or alcohol. Baker's strains are aerobic (use oxygen) and have been selected over time to produce carbon dioxide to make bread rise. In contrast, we are interested in distiller's strains because they are active in non-oxygen (anaerobic) environments like the rumen.

Selecting a rumen-stabilising yeast

From the many hundreds of anaerobic strains of *S. cerevisiae* we select individual strains by asking key questions, including:

1. Can it grow at body temperature range?
2. Will the strain remain viable in the rumen?
3. How does the yeast interact with key rumen microbes?
4. Is the strain stable during feed processing?

Why Yea-Sacc® is a perfect fit

S. cerevisiae 1026 has the right characteristics. It remains viable to produce compounds that stimulate fiber and lactate-utilising bacteria and is stable during feed processing.



Methane Reduction

Ruminants evolved a rumen as a way of extracting nutrients from the forages that grew around their feet. The little microbes that do the fermenting managed to flourish and became a foodstuff for the animal in their own right by being digested in the abomasum and the rest of the gut.

Many of these microbes are anaerobic and as they process the nutrients, they produce methane. This gas gradually builds up until the animal burps and releases the gas into the air.

The international effort to reduce greenhouse gas emissions has focused primarily on Carbon Dioxide but Methane is 33 times more potent and now all livestock producers are focused on finding ways of reducing these emissions.

This is not an unreasonable ambition and it does, in fact, present an opportunity to reduce emissions of methane whilst improving energy metabolism into Milk, Growth and Pregnancy.

Up until now there has been only small examples of progress on this front but there has been a great deal of progress in the last few years. We are now at the stage where a new product offering is emerging from DSM into the real world and I have to say it's actually quite exiting.

DSM have plans to produce their new Boaver® methane reduction additive at a new plant which will be constructed at their Scottish site at Dalry. We are keen to explore this product further as they claim around 30% methane reduction instantly! If this is the case and the reduction is sustained on a day-to-day basis it could be a game changer. We need to know more like costs and production dividends before we can go further.

There are already other products which will reduce methane per litre of production but Boaver® is supported by at least 48 peer reviewed studies and 45 trials. All we really need to discover is if there is a reliable long-term benefit and payback **but they are not communicating with us yet!**

EFSA have not approved the product yet but they have given it a green light by expressing a "positive opinion" which is a major step in the right direction.

Orego-Stim

Many farmers will recall using antibiotics like Virginiamycin and Chloramphenicol for calves as routine practice. The response was less disease and better growth. The government decided to ban the routine use of antibiotics to reduce the build-up of resistance to the drugs and to reduce residual effects in the animals.

Since the ban, there has been a focus on good practice like colostrum management and good hygiene, and the use of better calf milks like Britannia ECM and routine use of electrolytes like OsmoFit®. But... when you look at what an antibiotic's mode of action is; all of these management techniques whilst effective, are not the same!

Orego-Stim® is not an antibiotic but it is made using oregano essential oil, a eubiotic which is a natural herb extract.

Oregano is a common herb, one variety of which, after extract of the oil, has been shown in trials to have good antimicrobial properties and in another trial antioxidant properties.

All varieties of oregano contain these essential oils but the one used is particularly potent.

Orego-Stim® is based on pure Oregano essential oil extract. The type of Oregano is similar to the herb that we use in cooking but much, much, stronger! I was told that if you were to chew a leaf of this variety your tongue would go numb and you wouldn't be able to speak for a few hours.

Mmmmm. Note to self, could be useful!

We are **not** claiming that Orego-Stim® is a veterinary medicine but it is a powerful treatment for improved health and performance.

Orego-Stim® is used as a liquid (calves) or a powder.

We think this product is really important and exciting and cheap! So, it's in the boot!

Mineral Markets

Phosphorus.

Environmental pollution is becoming a cause for concern so its worth cutting back on wastage to reduce costs and improve pollution status.

Phosphorus is expensive! It costs about £35 per 1% added to a mineral supplement and it is frequently over fed. We are happy to offer a mineral check to see if you can save money by cutting it back. One key thing to remember though is to check the availability of the phosphorous because it can be locked up quite easily. Cereal contains quite a lot of locked up phosphorous where as Soya, Rapeseed and Distillers Grains have good availability.

Supply Issues

Calcined Magnesite, Magnesium Chloride.....Tight, low or no availability!

Zinc Sulphate (foot baths) Copper Sulphate (foot baths)..... Good availability

Himalayan rock salt.....Long waiting list and very firm price

Brown rock salt.....Available but not pretty!

PDV salt.....Firming rapidly in price long lead times.

Granular salt.....Same effect as PDV but cheaper!

Sodium BicarbonateGood availability but firm price

Rumen buffers.....No issues (manufacturers are generally well bought)

Limestone FlourFirmer than it used to be but no supply issues.

Haulage can still be tight due to COVID 19 and need to recruit more drivers so best to allow at least 11 working days lead times and in some cases more (single tonnes or less).

Raw Material Markets

The Soya market is as volatile as ever. I can remember when it was much more stable but the rise of China as a superpower and the increased acreage in South America along with the weather effects of climate change has added to its volatility.

Currently it's the latter influence that is responsible for its firmness in pricing. This year's Argentine harvest has been badly affected by drought and whilst the Brazilian crop is looking reasonably on forecast, it won't be able to make up for the deficit.

This is a greenlight for the traders to jack up the prices bolstered by shipping costs, COVID 19 and the usual political effects.

Some of the traders are privately convinced that as we approach late spring, there will be some sort of a crash on certain feed commodities for three key reasons: -

- The new northern hemisphere crops could be good.
- Demand for expensive commodities has reduced because some countries cannot afford the inflated costs so stocks are starting to build. Though the Chinese market is still buoyant.
- The effects of COVID will be much less of an issue.

Cereal crops are currently very firm indeed and will remain so until late spring when the speculation about this years crop can become less fiction and more fact! There is a new wild card though, The Ukraine and Russian tensions are now making the brokers very wary about future Ukrainian export markets. This has not affected prices yet but the threat is there!

Current Crude Protein Cost Comparisons of some Protein Sources Ex Port

	Price £	Dry Matter	Cost per	Energy	£ Cost per MJ	Protein	£ Cost per % CP	Average £ cost per	
	Per Tonne	%	Tonne DM	Mj/Kg DM	Per tonne D M	% DM	Per tonne D M	MJ & %CP /T DM	
De Hulled (Hipro) Soya Ext Meal	423	89	429.21	13.8	31.10	52.53	7.27	26.82	Late Nov
Argentinian Soya Ext Meal		89	0.00	13	0.00	42.4	0.00	0.00	
Lo Pro Soya Ext Meal		89	0.00	13	0.00	44	0.00	0.00	
Soypass	586	90	627.78	13.6	46.16	48	11.77	41.32	
NovaPro	349	88.5	372.88	13.1	28.91	34.83	9.47	29.14	delivered
Rapeseed Ext Meal	309	91	313.19	11.8	26.54	37	7.70	25.21	
Rapeseed Exp Meal	315	89	301.12	13.2	22.81	35.4	7.57	23.14	
Optigen	2000	99	2020.20	36	18.52	275	7.35	27.21	
Dry Wheat Grains	285	90	316.67	14.5	21.84	34	9.31	25.36	
Dry Maize Grains	283	90	314.44	15	20.96	30	10.48	26.73	

Excludes @ £20 for delivered on farm prices give or take! Prices on 1st February 2022

Bullet Points

- **Silage additives**

Now is a good time to book next year's additive. You won't have to pay for it until after its delivered but if you book it now the price will effectively be frozen until late next year.

Our own range of additives offer well proven products like the comprehensive multiple bacteria and multiple enzyme **F1 Evo** or the simple but effective **F1 Sprint** which works well in less challenging conditions.

- **Current Protected Fat Prices**

We reckon that if we compare the typical output response of say Golden Flake / Mawerlac Gold, Megalac, Nutrilac and **F1 Superfat**. The return on investment using a mid-lactation cow yielding around 33 litres is between 1.5 and 1.4 to one. A year ago it was a bit better than 2 to 1 ! The calcium soaps look to me to be the lowest return.

For more information on any of the items mentioned in this newsletter please get in touch with Jerry or Richard. Our phone numbers are always available during normal working hours. You can also email Jerry or visit the Lakeland-Scottish website.

Telephone **01768 899513** Mobile **07711 034141**

Email jerry@lakelandscottish.co.uk [Constantly updating website www.lakescot.co.uk](http://www.lakescot.co.uk)