

Lakeland-Scottish Feeds & Services Newsletter

## **Looking Forward**

Issue No 133\*

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### Introduction

**2023** looks like the evolution of our great industry is about to step up a gear and I for one am quite exited about it!

Both Lakeland-Scottish and TBA have always been at the forefront of the potential benefits of new technology in nutrition. I think that this year will not disappoint. The first real exposure we will get is scheduled for **Dairy Tech 23** at the RASE showground at Stoneleigh on February 1<sup>st</sup>.

TBA have taken space to show off the Britannia calf milk replacers so come and see us both and we can discuss both calf nutrition through to calving or any other ruminant nutrition topics.

**Algae** could just be the key food ingredient of the future! Like grass, I can convert sunlight into nutrients by photosynthesis, which makes it a great renewable resource. The quality of the nutritional profile of algae is impressive, and the oil fraction is stuffed with DHA the key limiting fatty acid for fertility responses and membrane health.

It's purely down to this quality and the relative costs vs. say marine fish oil that aqua culture is the fastest growing sector of food production worldwide. Its use in dairy nutrition has only really just scratched the surface but the future is coming fast. Our item on Optomega algae explains why we have chosen this route.

The end of 2023 seems to have been the top of the curve for milk prices and the predictions see a fall in the price as we approach the spring. Feed prices have started to ease but the most significant falls are seen in the protected fats and the calf milk replacers which have already come back @10% and look like they will continue to fall.

I have copied the Alltech In Touch League Table in to this news letter which ranks by feed efficiency and highlights that the best margins are not only linked to milk price or even feed cost but more to feed efficiency.

February 2023

So, what is the secret to great feed efficiency? One key factor could simply be great rumination. I published an item on a new 100% pure yeast product (no carrier) back in September, well, for the cost of about 0.25litre this product has more than paid back with improvements in rumen function as well as production.

### Algae as a Feed Source



Algae are a very diverse group of aquatic organisms that have the ability to conduct <u>photosynthesis</u>.

Some algae are familiar to most people; for instance, seaweeds (such as kelp or phytoplankton), pond scum or the algal blooms in lakes. Actually, there is a huge and varied range of algae that are not only helpful to us but are critical to our existence.

The photosynthetic pigments contained in algae are more varied than those of plants and their cells have features not found among plants and animals. Algae are major oxygen producers and they are also the foundation food base for almost all aquatic life.

Algae are commercially important as a source of crude oil and as sources of food and a number of pharmaceutical and industrial products for humans. Its this crude oil that is of key interest to us as a source of the essential fatty acid DHA.



You will mostly be aware of my endless presentation of marine fish oil as a massively beneficial source of the key essential fatty acids mostly DHA and EPA. Well marine fish oil has increased in price massively and whist oil derived from farmed fish is still on the portfolio, it isn't as good as the marine oil.

So we are switching to **Optomega Algae** with immediate effect. The good news is that whilst it cost more to buy it is **cheaper to use than Optomega Plus**. I have included some of the product presentation below but if you want to know more we will shortly be adding it to the website, sending out the new product leaflets or you can give me a call

#### **Reproductive Success**

Ensuring optimum fertility is vital to the success of enterprise. Pregnancy rates of under 20% are all too common, whereas a target of 30 -35% should be achievable.

Cows that do not fall pregnant in a timely manner are one of the biggest reasons for involuntary culling in dairy herds globally. This is associated with significant costs in replacing these animals as well as reproductive costs and milk losses.

A recent study (Wittbank, 2016) demonstrated that whilst around 80% of services result in successful fertilisation of the egg, by day 28 post insemination only 50% of cows are actually pregnant. This is reduced to 38% by day 42, demonstrating early embryonic mortality due to the failure of the material recognition of pregnancy.

#### **Omega-3 Fatty Acids and Fertility**

The role of long-chain omega-3 fatty acids has been well researched in the last 20 years. The essential fatty acid docosahexaenoic acid (DHA) has been shown to suppress the production of PGF2 $\alpha$ , a hormone that terminates the pregnancy in the early stages.

Thatcher et al., 2001, reported that omega-3 fatty acids suppressed PGF2α secretion by 60% compared to the control with no supplements, and was more effective than other omega-3 sources, such as alpha-linolenic acid (ALA) from linseed oil.

Optomega Algae is a free-flowing powder composed of dried algae suspended in non-GM rapeseed oil formulated on a unique mixed carrier system. A rich source of DHA; a biologically I important omega-3 fatty acid.

#### Feeding Rates:

Up to 65 -75 g/cow/day Optomega Algae Feed from 21 days pre-calving until pregnancy i

### **Falling Prices**

The table below is interesting because it clearly shows that it is not just milk price and yield that generates a profit. Feed costs, and feed efficiency (FCE) are plainly of key importance .

#### UK InTouch League Table Dairy – December 2022





Farm	FCE	Yield	DMI (Total)	Protein %	BF %	Feed Cost/ I	Cost/T (DM)	% Forage	Milk Price	Margin over Feed	DIM
High	1.72	38.94	27.92	4.10	5.78	26.66	344	73%	64.0	13.09	218
Average	1.36	31.18	22.91	3.43	4.31	18.37	248	53%	50.6	9.44	160
Low	0.96	17.35	17.76	3.12	3.64	14.27	176	29%	45.0	4.49	65
1	1.72	36.75	21.33	3.37	4.2	15.41	266	53%	48	11.68	161
2	1.67	37.49	22.49	3.45	4.08	18.57	310	37%	50	11.57	153
3	1.64	38.45	23.51	3.42	4.19	15.28	250	43%	51	13.09	212
4	1.6	35.57	22.28	3.46	4.48	20.61	329	51%	49	9.08	95
5	1.59	38.47	24.28	3.28	4	17.35	275	55%	48	11.99	174
6	1.57	38.94	24.83	3.12	3.64	18.62	292	36%	46	11.93	164
7	1.56	28.69	18.44	3.9	5	14.53	226	42%	54	9.19	119
8	1.54	34.53	22.37	3.52	4.46	17	262	45%	48	9.73	141
9	1.53	38.76	25.31	3.38	4.07	16.47	252	37%	47	11.72	155
10	1.51	29.37	19.43	3.38	4.43	16.2	245	51%	53	9.92	180
11	1.5	37.87	25.2	3.23	4.07	19.98	300	39%	48	10.7	166
12	1.48	30.73	20.77	3.55	4.37	16.29	241	49%	54	10.71	162
13	1.47	32.06	21.74	3.71	4.55	16.35	241	60%	57	11.52	127
14	1.46	35.29	24.13	3.47	4.16	16.66	244	55%	48	10.65	170
15	1.45	37.08	25.67	3.42	4.09	18.81	272	29%	47	10.25	174
16	1.44	28.17	19.62	4.1	5.78	18.85	271	58%	64	8.82	187
17	1.44	29.14	20.22	3.5	4.15	18.32	263	55%	49	8.61	189
18	1.43	30.23	21.21	3.45	4.45	17.07	243		55	10.55	80
19	1.43	37.25	26.1	3.47	4.3	20.84	297	61%	54	11.5	173
20	1.42	37.89	26.63	3.33	4.32	14.97	213	60%	48	11.86	166
21	1.42	34.98	24.72	3.34	3.99	16.01	226	34%	48	11.21	182
22	1.4	30.68	21.97	3.42	4.05	14.27	199	58%	49	10.55	137
23	1.4	32.9	23.47	3.5	4.39	17.98	252	48%	49	9.44	200
24	1.38	30.88	22.4	3.45	4.12	15.51	214	72%	46	9.16	180
25	1.36	34.12	25.14	3.43	4.31	17.19	233	57%	50	10.56	74
26	1.36	29.57	21.71	3.66	4.52	15.57	212	42%	52	9.66	152
27	1.36	34.75	25.49	3.48	4.51	14.48	197	61%	48	10.6	178
28	1.35	31.6	23.49	3.35	4.19	21.15	285	40%	49	8.52	165
29	1.34	27.68	20.71	3.35	4.78	20.2	270		54	8.04	190
30	1.33	24.82	18.65	3.42	4.37	20.86	278	48%	55	7.97	100
31	1.33	29.6	22.22	3.63	4.77	16.58	220	56%	51	8.7	180
32	1.33	31.69	23.77	3.42	3.98	19.91	265	36%	48	8.92	197
33	1.32	29.33	22.28	3.3	4.2	16.16	213	52%	46	8.54	160
34	1.3	33.91	26.04	3.39	4.28	17.41	227	47%	51	10.71	204
35	1.29	28.64	22.19	3.19	4.21	26.66	344	68%	56	8.13	65
36	1.28	26.13	20.47	3.6	4.51	18.56	237	50%	52	7.76	180
37	1.26	35.05	27.92	3.2	4	25.69	322	50%	50	8.81	124
38	1.25	30.86	24.71	3.26	4.14	20.3	250	50%	47	8.34	147
39	1.25	28.74	23.03	3.65	4.27	16.31	204	57%	49	8.7	153

40	1.25	28.36	22.65	3.34	3.75	21.78	273	53%	48	7.94	180
41	1.22	27.59	22.6	3.35	4.32	22.95	280	66%	55	8.47	172
42	1.21	29.14	24.13	3.39	4.54	15.09	182	60%	49	8.88	153

43	1.2	28.02	23.3	3.35	4.4	18.53	223	54%	51	8.37	185
44	1.2	25.19	20.92	3.5	4.16	14.63	176	55%	51	8.83	201
45	1.19	26.62	22.36	3.22	4.26	24.22	288	59%	55	8	110
46	1.19	31.6	26.66	3.66	4.7	17.06	202	71%	54	9.94	153
47	1.13	28.41	25.27	3.3	4	16.76	188	56%	45	8.14	168
48	1.09	23.88	21.87	3.34	4.2	21.77	237	66%	55	7.6	194
49	1.04	27.27	26.32	3.34	4.56	20.9	217	62%	46	6.1	218
51	0.98	17.35	17.76	3.42	4.43	18.8	183	72%	47	4.49	160
52	0.96	18.03	18.73	3.31	4.06	25.17	242	73%	55	5.29	142

Alltech.com/uk

The introduction comments on falling feed prices seems to be gathering some momentum.

Apart from the calf milk replacers and protected fats mentioned earlier, I have just been made aware of further reductions in the price of both Optigen and feed grade urea.

Straights however are remaining stubborn, partly because world stocks are not actually that plentiful and it is now evident that cropping reliability is being significantly impacted by climate change as well as politics and the Ukraine war.

2023 is another year, and to say that the markets are a bit jittery about the future is frankly an understatement.

### F 1 ProSecure 1 & 2 new "Super Supplements"

I have decided to repeat this article which first appeared in the September issue because we are much more confident that the dividends are excellent, even in top performing herds

As most of you know, I have worked in this industry for over 45 years and it has taken that long to achieve a 1005 yeast farmpack product. Industry politics is the main reason that we haven't been able to do it before.

Just imagine what we are talking about here, Most farmpacks have contained between 1 and 10 grams of live yeast. This tells you nothing about how good the product is because some strains are much more active than others.

The "Dead" yeast cultures are not pure yeast, they are mostly the dried medium on which the yeast grew plus the dried dead yeast.

#### There are two fundamental truths about feeding ruminants.

**1:** You are wasting time and money on expensive supplements (apart from minerals and vitamins) unless you get the <u>basic</u> diet balanced for **rumen function first**, and production second.

2: There is one fundamental rule when it comes to feeding ruminants; any diet must prioritise the health of the rumen.

This will always yield dividends.

Remember that the cow or sheep will have evolved over millions of years to gain enough nutrition from what grew around their feet. The fermentation of this "forage" yielded some extremely nutrient rich rumen microbes which, when digested in the fourth stomach and hind gut supplied most of the nutrition that the animal needed. Okay, so that ancient ruminant wasn't very productive by todays standards but it could grow, get pregnant and produce enough milk to feed its young calf or lamb and then do it again!

Modern breeds and genetics have produced animals with the potential to do far more but...... they are still ruminants and it is still true that the richest source of nutrients is those rumen microbes (MCP) microbial crude protein. (see the table below)

The golden rule, therefore, is that no matter how productive the animal is we must keep that rumen producing as much MCP as we can. Nutritionists have accepted that it is difficult to get much more out of the rumen than the standard type of diet normally achieves, but the rewards for increasing MCP output are certainly worth striving for.

The importance of maintaining a healthy rumen pH and a supply of a correctly balanced ration is now the norm but we know that the addition of live yeast, i.e: **Yeasacc TS** ® can help rumen function and help to optimise the output of rumen microbes.

We also know that Yeast itself, (See Levucell SC Titan below) and some inert yeast cultures like **Diamond V** and **DEMP** can also help with rumen output. In fact, **DEMP and Levucell** are fantastic pure forms of MCP that contain all of the essential amino acids and give an instant response.

	Fish Meal	Soya	Microbial Protein
Methionine	2.4	0.65	2.7
Lysine	5.4	2.9	8.5
Histadine	1.4	1.1	2.7
Phenylalanine	2.7	2.2	5.2
Threonine	2.9	1.7	5.6
Leucine	5.4	3.4	7.5
isaleucine	3.0	2.5	5.9
Valine	6	?	6.2
Arginine	4.0	3.4	7.0
Tryptophan	0.7	0.6	2.7

# Rumen Protein- A great source of amino acids

Levucell'SC

Remember that the rule of partition of nutrients says that cows will prioritise production in early lactation, production and milk solids in mid lactation, and milk solids and condition in late lactation.

But...... We don't want our far off dry cows to get fat so the right approach is to let them put on the condition in late lactation NOT after we dry them off (difficult calving's of big calves and ketosis being the main risks). This means that we can be justified in adding **F1 ProSecure** right through the lactation. Okay, Holsteins are the obvious choice for this approach and some breeds and crosses would **not** need the addition in late lactation.

**F1 ProSecure** can, in the right conditions, increase the nutrient supply to **both** the rumen microbes **and** the anaerobic fermenting microbes in the hind gut. This is fantastic because few additives will improve nutrient absorbtion in the hind gut which is usually not even discussed!

**F1 ProSecure** a complex **100 %** Yeast based product that has a **unique** manufacturing process at all levels and works with a very specific mode of action.

In the rumen both of the new **F1 ProSecure** supplements supply a significant quantity of polypeptides and amino acids, that will increase the rumen microbe population and rumen nutrient output. The product also helps to recycle free nitrogen into extra Microbial crude protein (MCP). We have also included a full dose of **Yeasacc TS** (V1) and a double dose (V2) in our products which means this dual-purpose approach works incredibly well.

In the hind gut **F1 ProSecure** supplies a very particular limiting carbohydrate that significantly increases anaerobic fermentation to produce more butyrate and propionate but not lactate.

So, what does all this mean?

In a recent trial cows that were already averaging 50 litres had a 4% improved yield of EC milk, a 2% increase in butterfat and a 9% increase in milk protein! For most milk contract prices that is worth around £1.00p per cow per day for a cost of less than 13 pence!

We can't always promise results like this but we can promise improved rumination and digestibility all round and that is bound to give a dividend in all round improved performance including fertility, immune response and general digestive health.

All of the trial responses have been significant but with all new products it can take time for them to catch on. Your only decision is "is it worth a try?" The answer to that question is probably yes,

Target animals are close up dry cows, fresh calvers and high yield groups for 3 reasons:

- Both versions of F 1 Prosecure are also very effective cooling treatments because they will also help cows with a high metabolic rate reduce heat stress by increasing pH by reducing lactic acid loading both in the rumen and in the hind gut.
- 2. Increasing MCP output from the rumen supplies all of the most limiting amino acids like Methionine and Lysine.
- 3. Close up dry cows will benefit from a smoother rumen transition from the dry cow diet to the production diet.

### **Raw Material Markets**

I guess The big news is that the wheat price has collapsed from the late autumn highs to currently around £325 per tonne! When compared to maize or feeds like sugar beet pulp it's a must have commodity. We just need to use as much as we can without jeopardising rumen function or it could backfire into acidosis etc.

Current soya prices have stabilised to some extent on the world market. But the world stocks are not really that high on a historic level.

The exchange rate of the Pound and Euro with the dollar has also helped the commodity prices remain firm.

We all know why soya protein prices remain firm but they are hovering around £548 for February 23; and £537 for Apr 2023. Current Maize prices are also hovering around £282 ex-port spot to Oct 23. Current London Wheat Futures are around £225 ex store.

	Price £	Dry Matter	Cost per	Energy	£ Cost per MJ	Protein	£ Cost per % CP	Average £ cost per	
	Per Tonne	%	Tonne DM	Mi/Kg DM	Per tonne D M	% DM	Per tonne D M	MJ & %CP /T DM	
De Hulled (Hipro) Soya Ext Meal	548	90	608.89	13.8	44.12	53.33	10.43	36.60	delivered
Argentinian Soya Ext Meal	533	89	598.88	13	46.07	42.4	12.57	40.56	delivered
Lo Pro Soya Ext Meal	533	89	598.88	13	46.07	44	0.00	23.03	delivered
Soypass	725	90	805.56	13.6	59.23	48	15.10	50.67	delivered
NovaPro	483	88.5	545.76	13.1	41.66	34.85	13.95	40.28	delivered
Rapeseed Ext Meal	452	90	502.22	11.8	42.56	37	12.16	38.23	delivered
Rapeseed Exp Meal	459	89	515.73	13.2	39.07	35.4	13.42	38.24	delivered
Optigen	2275	99	2297.98	36	63.83	275	8.41	43.64	delivered
Dry Wheat Grains	435	90	483.33	14.5	33.33	34	14.22	36.48	delivered
Dry Maize Grains	435	90	483.33	15	32.22	30	16.11	38.57	delivered

**Current Crude Protein Cost Comparisons of some Protein Sources** 

Includes @ £25 for delivered bulk 29 tonne on farm prices give or take! Prices on 25 January 2023

- F1 Yeast The existing F1 Yeast and F1 Prosecure 1 and 2 are all available now so if you check out our web site you will get all of the fine detail. The web link is as follows: <a href="http://www.lakescot.co.uk/f1-yeast/">www.lakescot.co.uk/f1-yeast/</a>
- **Mawerlac Gold** is a great substitute for most other refined fats. It is a 100% fat product (no carrier) and at 38MJ/KG DM it's excellent value for money
- Feed grade Urea is around £1080 per tonne and dropping which looks great on paper but bear in mind that although it is half the price of Optigen it's volatility means that is is only viable for around 2 hours in atypical farm mix and after that it has disappeared into the atmosphere as ammonia gas! Optigen will last all day and only get slowly released after it gets into the rumen and its protection is released by body heat.

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

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