Lakeland-Scottish Feeds & Services
Newsletter

Beef Grower Diets

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Contents

Introduction

This Newsletter was really supposed to be focused on beef grower diets, but then Trouw Nutrition decided to launch "**Milkivit ONE**", so I went to the first of the "Calf Innovation Road Show" events at Carlisle racecourse on February 18th and came away thinking that they had really progressed since the original launch of Milkivit ECM back in 2018. This could be a real game changer for most farmers! (See below

Currently most farmers would agree that prices for milk and meat are "not so bad"! We all know how fragile that can be and how markets can change at the drop of a hat.

Something that I have never quite been able to understand is the way farmers will invest in some of the more interesting supplements when their farm prices are good and yet even though, in most cases; the return on those products is very good, they drop them out of the mix when farm prices drop!

I have included some really good supplements in this issue; ones that return many times more than the costs. These are always going to deliver better performance and margins even when the milk or beef prices drop off!

When it comes to politics, I am struggling to remember a time when the mood in our industry has ever been so flat! I was going to make a comment but we all know the score so I will save it for now,

On a much more positive note, this newsletter is more about trying to become a bit more efficient and profitable by making a few little tweaks to what we do if it fits in!

Beef grower diets have been taking up quite a bit of my time recently, so I thought I would summarise a few of the dietary targets that we should try an achieve for a good rate of growth.

I have also been on three farms recently where the cows were being treated for Sole Ulcers. In one case the farmer had employed a consultant to explain how to deal with the problem.

Whilst interesting the guy never really explained how to avoid them, it was more about treatment and lifting feet more often.

F 1 Rumen Active is a targeted supplement of Methionine which has a major effect on butterfat production even in the highest yielding cows. **Smartamine** is the version you need for volume!

Omega 3 oils contain a great source of ESSENTIAL fatty acids. DHA, EPA and CLA (believe me the abbreviations are much easier to say).

That word essential means that the animal can't produce them itself so the diet **has** to contain them. It they are not added their absence WILL limit performance. Inclusion of Omega 3's will always improve performance of good to high output animals because there is a very slim chance that their standard diet will contain enough.

Milkivit ONE

If you look at whole milk on a dry matter only basis how much fat do you think it is? The answer is 34%! Obviously, there are no 34% fat milk replacers on the market and if we produced a dry whole milk powder it would probably cost around £10,000 per tonne!

So, calf milk replacers are at best an effective substitute for the real thing.

Over the last few years since **ECM** was launched, there has been a raft of copycat products. **None** of which are the same as the Trouw manufactured Milkivit version! Our own **Britannia.** remains the version with **"Patriot Gold**  **"** the most complex and we would argue best of the added performance packs. The features and benefits of using **Britannia. ECM** are comprehensive and would take to long to go into in detail here (check out our website www.lakescot) , rest assured it is still a great choice.

Now there is a new and unique product in **Milkivit ONE** which features a specialised fat complex called **LactoFat Pro** (patent pending). This is a specially manufactured ingredient which mimics more closely the fatty acid profile of natural milk fat. The normal inclusions of coconut, palm and rape fats have worked well enough in the past but are not a very close match to the fatty acid profile of milk fat so the development of **LactoFat Pro** is a major step towards a true copy of milk fat.

The benefits are a true game changer in the quest to mimic mother nature. Improved early life performance, better gut development, much better disease resistance, less scour, less pneumonia and improved growth rates.

All of these benefits mean that the calf rearing staff have a better time looking after healthier and thriving calves.

What does it cost and should you change?

Of course, it is a bit more than **Britannia.** but actually not that much more!

Should you use it? Well, I'll leave that up to you but if you are willing to invest in the long-term productivity, fertility and life span of your heifer calves, this is an investment that has a large amount of provenance behind it to give you the confidence to switch.

Beef Grower Diets

The very first thing to keep in mind whilst working out the best way to feed growing cattle is that they are ruminants!

That means that whatever we do we need to prioritise creating an optimum rumen function. If we ignore this (for example by stuffing the animal with too many concentrates) we will not get the best performance and may well create some animal health issues. **F 1 Yeast** by the way will do a lot to help rumen optimisation and is worth around 0.2Kg liveweight gain per day!

Nutritional Requirements

The construction of rations for suckler beef and growing cattle relies on essentially the same information required for all ruminants.

1. The liveweight of the animal.
2. The targeted level of production. (daily liveweight gain)
3. The type of production required. (growth, finish) or (lean to fat ratios).

Once these parameters have been assessed the ration nutrient requirements essential to produce the target level of performance need to be calculated.

This does not need to be particularly hard. There are some great computer models that can do the number crunching. So, its probably just down to grabbing someone with the right software to come and discuss the options with you!

We tend to rely on five key nutritional factors to balance the optimum diet.

- Dry matter (feed) intakes.
- Energy intakes and sources.
- Protein intakes and sources.
- Mineral balances.
- Clean water.

There are of course many other factors that will come into play. Environment, breed, animal health, management routine, buildings, stocking rate, weather and land conditions, to name just a few. For now, though, we will stick to feeding!

Dry Matter Intake.

The calculation of this figure has been the subject of much debate. It is derived from the liveweight, body condition, breed, sex, chosen feeding system, general digestibility, palatability, forage quality, and amount of concentrates; and the way all of these interact.

Dry Matter Intakes of Growing Cattle

–	Dry Matter Intake	Percentage Variation
100Kg	2.2	up to plus or minus 20%
300Kg	5.7	up to plus or minus 25%
500Kg	8.6	up to plus or minus 25%

Modified to 2.10% body weight (Jerry Trowbridge 2001/2025)

–	Dry Matter Intake	Percentage Variation
100Kg	2.1	up to plus or minus 10%
300Kg	6.3	up to plus or minus 15%
500Kg	10.5	up to plus or minus 20%

Modified to 2.10% body weight (Jerry Trowbridge 2001/2025)

Hay and Straw

–	Hay			Straw		Concentrates
ME (MJ/Kg DM	10	9	8	7.5	6.5	12.5
Liveweight (Kg)	Feed intake (Kg DM per day)					
100	2.5	2.3	2.1	2.0	1.8	2.9
200	4.6	4.2	3.8	3.6	3.2	5.1
300	6.3	5.7	5.1	4.8	4.2	7.2
400	7.7	6.8	6.1	5.7	5.0	8.7
500	8.9	7.8	6.9	6.4	5.5	9.5
Reduction of forage DM per Kg Concentrate DM (Kg)	0.6	0.5	0.4	0.2	0.2	–

Feed intakes for growing cattle fed to appetite

Grass and maize silages

–							
							Maize Silage
ME (MJ/Kg DM)	11		10		9		11
Fermentation	Good	Poor	Good	Poor	Good	Poor	–
Liveweight (Kg)	Feed intake (Kg Dry Matter per day)						
100	2.6	2.3	2.4	2.1	2.2	1.9	2.7
200	4.8	4.2	4.4	3.9	4.0	3.5	5.0
300	6.6	5.8	6.0	5.3	5.4	4.7	6.9
400	8.0	7.0	7.4	6.5	6.4	5.6	8.4
500	9.1	8.0	8.6	7.5	7.2	6.4	9.7
Reduction in forage DM per Kg concentrate DM (Kg)	0.6	0.5	0.5	0.4	0.4	0.3	0.6

Note:
We have seen cases of growing cattle being able to consume up to 12.5 Kg DM on easy access maize and grass silages where the presentation is good and the trough space per beast is adequate. Unless ad-lib feeding is available, adequate space should be provided for all stock to feed simultaneously. This will prevent more dominant animals bullying more timid animals. Pregnant cows should be allowed extra space.
The table below shows minimum feeding space requirements for different weights of cattle for both ration fed stock and stock fed ad-lib. We would suggest a slightly more generous allowance.

Feed Barrier Space

ass of animal(kg)	Ration fed, Feed barrier width (mm/animal)	Ad-lib fed, Feed barrier width (mm/animal)
200	400	150
300	500	150
400	550	190
500	600	240
600	670	280
700	700	320
800	800	340

ENERGY REQUIREMENTS FOR GROWING BEEF

Final ration M/D and its effect on performance (adjusted figures)

Designation	Cattle Types
A	Continental breed / cross bulls.
B	Continental breed / cross steers & British breed / cross bulls.
C	Continental breed / cross heifers & British breed / cross steers & Friesian / Holstein bulls.
D	British breed / cross heifers & Friesian / Holstein steers.
E	Friesian / Holstein heifers.

Growing and finishing cattle

Cattle Type >	A	B	C	D	E
Daily Gain (Kg)	Predicted ration energy density (M/D) expressed as MJ ME/Kg DM*				
0.6	N/A	N/A	10.4	10.5	10.6
0.8	N/A	10.7	10.8	10.9	11.0
1.0	11.2	11.3	11.4	11.5	11.6
1.2	11.4	11.5	11.6	11.2	N/A
1.4	11.6	11.8	12.0	N/A	N/A
1.6	12.0	N/A	N/A	N/A	N/A

* – Megajoules of metabolisable energy per kilogram of dietary dry matter.
N/A – Not applicable to this type of cattle.
The figures quoted here are at variance with some other sources of published data.
I have found that certain guidelines have proved somewhat optimistic.

For example:-to gain 0.9 kg per day:
a 400 Kg Continental cross bull needs 78 MJ.**
a 400 Kg British breed cross bull needs 83 MJ***
a 400 Kg Friesian / Holstein bull needs 88 MJ****
** Equivalent to 7.5 Kg dry matter at 10.4 MJ > Corrected to 7. 2 Kg DM at 10.8 MJ
*** Equivalent to 7.5 Kg dry matter at 11.0 MJ > Corrected to 7. 5 Kg DM at 11.0 MJ
**** Equivalent to 7.5 Kg dry matter at 11.7 MJ > Corrected to 7. 8 Kg DM at 11.3 MJ
Note: In reality the higher the M/D the higher the intake so the corrected figures are actually closer to reality.
In order to keep life simple Table 8 shows the requirements of protein for growing cattle to be matched with the energy density of the diet.

PROTEIN REQUIREMENTS

Protein is the stuff that meat is made of. The growth of the animal is governed by the relationship between the amount and type of energy in the diet and the amount and type of protein.

In the light of experience my figures are at slight variance with some of the published data. I have found that growing animals actually grow better if the protein contents are a little higher than normally recommended.
This can be easily borne out by comparing the performance of growing stock at the same age on spring grass at say 18% to 22% crude protein and indoor silage-based diets typically at 13% to 14% crude protein.

As a rule of thumb, the list below seems to work really well:

• 0 weeks to weaning	Milk plus 18% CP pellet or coarse mix creeps fed dry.
• Weaning to 200 Kg	Forage plus a 16% pellet or blend to average 16% in the total ration.
• 200Kg to 350 Kg	Forage plus a 15% pellet or blend to average 15% in the total ration.
• 350Kg to finisher diet	Forage plus a 14% pellet or blend to average 14% in the total ration.
• Finisher diet	Forage plus a 12% pellet or blend to average 12% in the total ration.

Crude protein requirements for growing cattle (college notes)

–	Ration energy density (M/D)(Megajoules per kilo of dry matter)				
–	9	10	11	12	13
Liveweight	Crude Protein content of the dry matter of the total ration (%)				
100	–	–	18	21	24
200	–	14	14.5	15.5	16.5
300	13	13.5	14	15	15.5
300+	12	13	13.5	14	14.5

There are some modifications that can be made to the data in table 8 a. UK breeds can require around 1% less crude protein than the stated values although this should be reviewed against actual performance rates of growth. Check weighing at regular intervals is recommended good practice for all growing cattle in order to make any adjustments necessary to keep to the targeted performance levels.

MINERALS FOR BEEF

The main mineral requirements for beef cows are similar to those of dairy cows. Sucklers are susceptible to staggers since they are generally fed less concentrates and, in the case of upland beef, tend to be reared on poor pastures.
It is advisable for these farms to dose with boluses or feed mineral supplements.
Male animals and steers (castrates) should not have access to Magnesium or Phosphorous since these two elements predispose Urinary Calculi (Stones) which eventually block the urethra and prevent the animal from passing urine, the effect is normally fatal.
Most beef should get plenty of calcium, salt, copper, selenium, and vitamin E. It is advisable to check the mineral status of the diet ingredients first and then buy a balancing supplement.

Sole Ulcers

Sole ulcers are one of the most common causes of lameness in dairy cattle. It is defined as an area of damaged sole horn which has completely lost the horn tissue except for the corium.

Sole ulcers occur when the flexor tendon supporting and the fatty pad below the pedal bone within the hoof weaken.

The bone can then move and sink causing damage to the horn producing tissue beneath and in severe or persistent cases halting horn production. As the sole wears the area of damaged horn is exposed leading to the development of a sole ulcer.

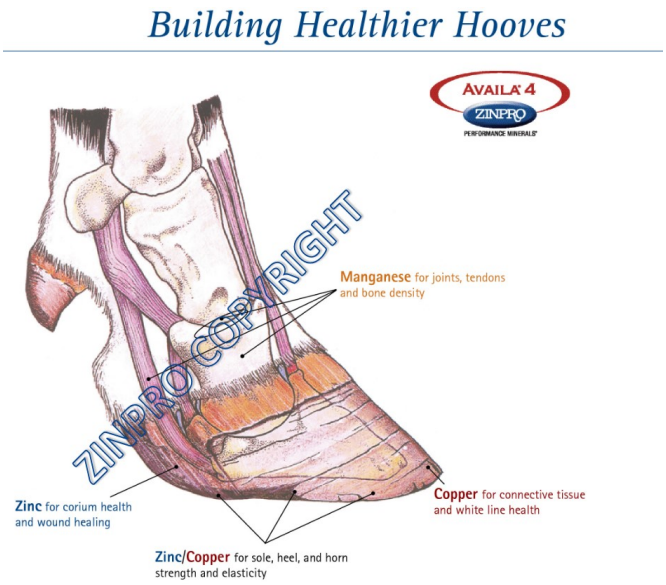
Clinical signs of sole ulcers

- Pain and lameness

- Bruising on the sole surface normally seen as a yellow discolouration
- Thinning of the sole over the ulcer

Prevention and control

- Balance the diet with adequate forage as with Laminitis prevention.
- **Thin cows are more likely to suffer damage to the pedal bone because the fat pad between the bone and the horn is not thick enough to provide the cushion needed to absorb shock when the cow treads on uneven surfaces.**
- **It's always a good idea to keep cow condition at a minimum score of 2.75 and a maximum of 3.5.**
  Fresh cows and high yielding cows at turnout are much more likely to loose too much condition and if cows are dried off too thin, by the time they are close up its too late to repair the fat pads at the base of the femur!
- Always provide an adequate number of cubicles with enough space for all of the cows to lie down. The idea that not all cows will ever lay down at the same time is a difficult one to accept because most cubicle sheds will be limited for space in other ways as well. I guess that we now know that stress reduction is liked to better production and health so ensuring plenty of space should be reckoned as another essential management practice.
- Ensure that the maintenance of trackways, gateways and feeding areas is reviewed regularly.
- A trimming program carried out by a specifically trained person is a great routine. I know of one farm manager who inspects every cow once every day as they leave the parlour and has a check list for routine procedures but he is also locomotion , hock, and udder scoring at the same time. Anything suspect is diverted to a holding pen for further inspection.
- Good mineral nutrition is essential to ensure that both cartilage, horn and bone remain healthy.



Of course, there is a lot more to lameness than stuffing a few extra minerals into the cow, Inspecting and trimming feet at least twice a year , foot bathing, attention to the quality and type of walking surfaces, and time spent lying are all important aspects of foot management which we will save for another day.

The list below is also from Nigel Cook's presentation at a Zinpro Blue Ribbon event and summarises the approach of the 66 elite herd study group which they have been using to gauge good management practise

How Elite Herds Prevent Lameness

Characteristic	*66 Elite Herds*
Lameness prevalence %	13
% Sand (deep loose bedding)	62 (70)
% Rubber floors in pens	5
% Rubber floors in transfer lanes	15
% Rubber floors in holding areas	41
% Rubber floors in parlors	68
% Pasture access	9.1 (5/6 Cl 2)
% Trim cows at least 2 x per lactation	58
% Trim heifers before calving	49
Mean footbath frequency (x per week)	4.5
Cows per FTE	62

Omega 3's, Why you should use them

Fish oil is a rich source of Omega 3 fatty acids DHA and EPA. These have been shown to have a greatly beneficial effect on the growth and development of healthy eggs and the mother's ability to implant those eggs on the uterine wall and thus become pregnant.

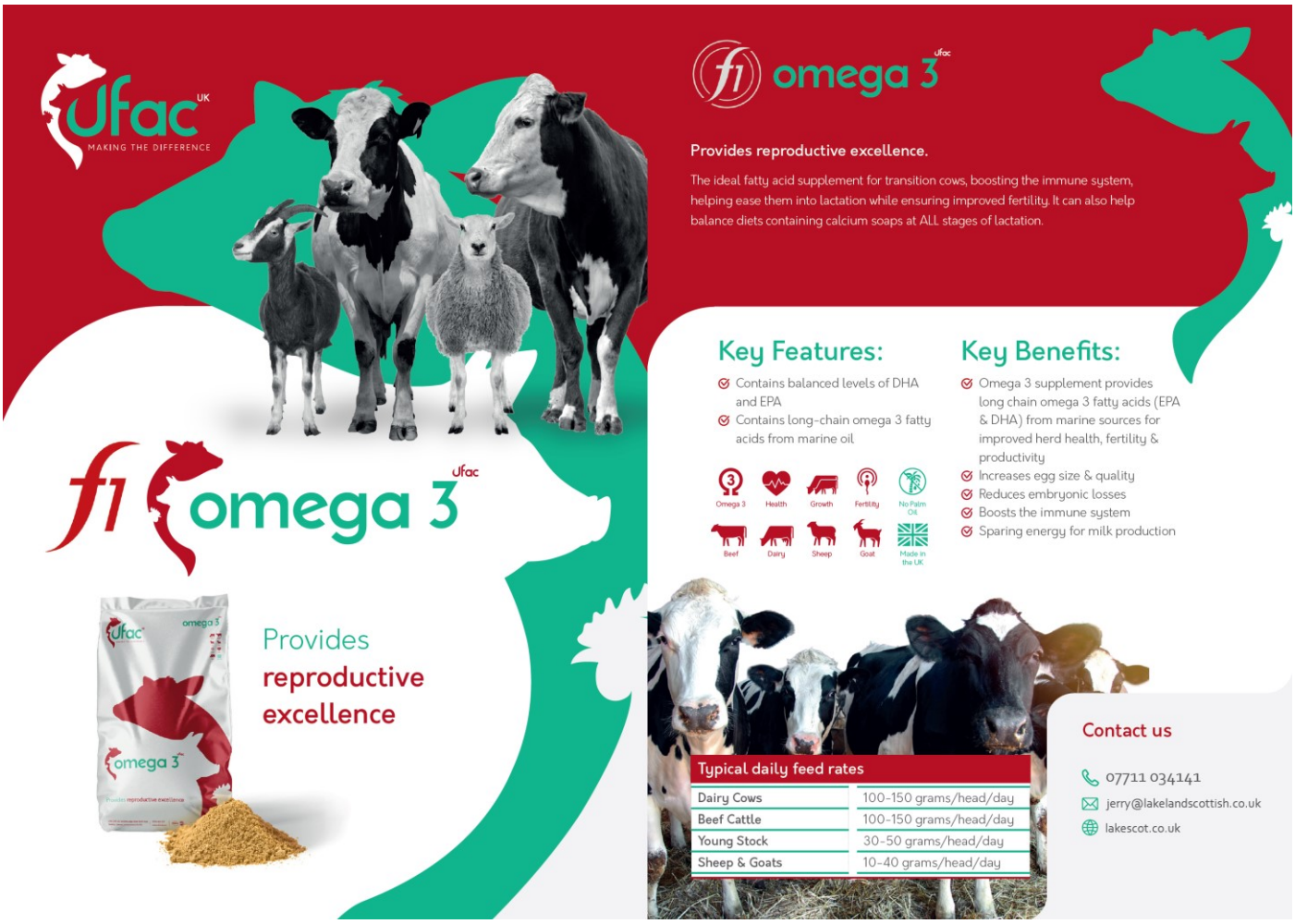
This technique has now been used to encourage good embryo flushing and better fertility in many species.

It has also been shown that DHA and EPA have a vital role in maintaining all membrane health and function throughout the whole body. The following list of features helps to explain why we get more than we expect when we use a fish oil supplement like **F 1 Omega 3 Supplement.**

1. Improved mammary tissue areolae membranes for lactation.
2. Improved intestinal gut membranes
3. Improved liver health

4. Better immune response
5. Larger and healthier eggs
6. Improved uterine wall membrane interface for better egg implantation.
7. Improved respiratory tract function

But……Much of the fish oil switched from marine fish to refined salmon oil produced from farmed fish. It now appears that the change in the diet fed to fish includes significant quantities of soya protein and this has significantly reduced the amount of EHA and DHA contained in the fish oil derived from these farmed salmon. **F 1 Omega 3 Supplement** is primarily derived from marine oil as a byproduct of the marine fish processing industry.



F 1 Yeast Price Rollback Offer

Following the success of our 2024 promotion based on the rollout price of **F 1 Yeast** when we launched it 25 years ago, **we are going to hold the discounted price until the end of 2025!**

There has never been a better time to get on board with a brilliant live yeast supplement with a great track record for success in both dairy and beef production systems.

Raw Material Markets

Soya prices still set the trend for most of the other protein straight feeds. Current expectations are that current price for Hi-Pro will be around £340's for full loads until November. Rapeseed meal is normally around ⅔of the protein and should b e a bit less than ⅔ of the price because it is also much lower in energy, current futures are around £260.s to £270's until November which is just over ¾ of the price of HiPro Soya.

I recently looked at some reports on Linked In which showcased the value of treated Rapeseed meal versus Hi-Pro Soya and whilst they were able to demonstrate a production advantage in the right dietary conditions, the value for money looks questionable under most cost comparisons.

Value for money depends on how your diets are constructed and what your targets need to be. The net zero dividend is now starting to play a real part in the buying decision! So when your milk price is incentivised (or penalised) by your buyers the buying decision is being swayed more towards alternative proteins and perhaps methionine / lysine / histidine supplements to correct for a shortage of the limiting essential amino acids. I do wander if the incentives and or penalties truly cover the costs!

Cereal futures are getting very interesting. May London wheat futures were at £197 'ish for November with longer positions slightly firmer. This represents about £215 on farm.

Protected fats are reasonably good value but refined pure C16 fats like Butterfat Extra are still withdrawn due to supply issues.

- Molasses and Molasses Blends are down in price for the winter.
- Sugar Beet Pulp prices have been withdrawn so unless you are already booked to April it might be tricky getting any more UK production
- Trident Distillers Grains in bulk and Prairie Meal in Totes are still options.

- **Britannia.** Our unique **Patriot Gold** performance pack is another reason to try this product. This product is now starting to outsell its competitors in Northern Ireland through our trading partners at Farmgate Nutrition. The recent Calf Conference at the Easterbrook Hall in Dumfries showcased the value of feeding high volumes of high quality skim milk based products with no whey powder inclusions.

- **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 **still** even better value for money than just about all of the others at the moment!

- 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.**Telephone 01768 899513 Mobile 07711 034141 Email jerry@lakelandscottish.co.uk Website www.lakescot.co.uk**