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Introduction

I do *not* have a negative approach to life in general and like to try and find positives to concentrate on. This introduction is probably not that positive but I think that most tricky situations just have to be managed for the best possible outcome.

So, this introduction hi-lights the current issues facing most of us, for warned is for armed as they say. The level of uncertainty in all of the markets, and for freight and labour means that the future is impossible to predict with any degree of accuracy. This means that we are working on a day-to-day basis, in other words, we are now “**Winging It**” through the next few months at least!

Book Well Ahead

Current order lead times are being extended by most of our suppliers by a few days. This means that we could need nearly 15 working-days' notice (could be as much as 21 days if you include weekends) on some products! This means that Christmas / New Year will be very challenging indeed.

We are aware that many farmers could be caught out by this so we will be in touch to prompt orders if we think there could be a chance of you running out before we can get a delivery to you.

Why do we have this problem? Four separate conditions have conspired to interrupt supplies:

1. Transport. Labour shortages. Lack of HGV drivers, most will be aware that we are currently short of about 20,000! Closure of HGV test centres has prevented newly qualified drivers replacing retiring ones for the last 18 months. Brexit and COVID-19 has resulted in many foreign drivers staying home, or self-isolating.

2. Longer lead times on freight. Not only are we experiencing shortages of certain imported raw materials, (Propcorn, Dextrose, certain vitamins, certain minerals, palm fats, monopropylene glycol, glycerine, etc (there was a big fire at the BASF factory in Germany). We are also seeing freight charges increase exponentially. The main freight operators (there are only three and obviously they are not talking to each other about freight rates....) are charging between £3,000 and £27,000 per container! That is blatant profiteering, because they can!
3. Brexit has meant some delays at ports and overburdened paperwork, which is different for each EU country and is prompting some exporters and importers to look for easier markets.
4. COVID-19. So many changes to working practices and staff being unable to work has created shortages in the labour market. There has also been some interruption to manufacturing due to self-isolating staff.

Some pundits are predicting that shortages in raw materials for manufacture will further create shortages in finished goods and certain foodstuffs and may lead to inflation and possibly even another recession. (All in time for Christmas! Sorry, that was a bit negative).

This newsletter will be circulated as normal, we will post it, publish it on our website, Tweet and Facebook it, but if any of you wish to pass it on, please feel free. I recently became aware that the last one had been read by a student in Northern Ireland!

In 1947 the UK government had reflected on the inability of UK agriculture to produce enough food to feed the nation. This was prompted by the appalling loss of life suffered in the convoys of ships sent to keep Britain supplied during World War Two. The act threw down the gauntlet and asked all farmers to develop their businesses to embrace technology, science, and breeding and produce as much as they could.

This policy stimulated progressive breeding programs for crops and livestock, there were improvements on many different fronts. We changed our dairy cow from Shorthorn to Friesian to Holstein and quadrupled our cereal yields the pig and poultry industries are so much further developed than those farmers could have ever imagined.

Then, when we were about 85% self-sufficient, we introduced quotas as part of our commitment to trade within the EU. There was a 9% cut in milk output scheduled for 1983/4 and milk quota suddenly had a value. The rest of our production was also challenged by the EU market conditions and currently we are only 50% self-sufficient.

The vulnerability of this situation is fast becoming apparent. Only in August we saw KFC and Nando's looking at temporarily closing branches and considering alternative food sources to chicken, because regardless of what the politicians are telling us it is no longer possible to maintain a reliable regular supply of processed chicken via the EU border controls or when there is not enough transport to move it. Anyone who has been to a supermarket recently will have seen some empty shelves, and it's a strange mix of shortages, but it is another good indication of supply issues on the world markets.

Eventually the marketing boards were abandoned in favour of independent processors who could arrange their own purchase prices and compete for their own customers and milk quota no longer had any value. This competition has resulted in many different pricing structures and a range in price of around 10 pence per litre for milk.

It's fair to say that those producers on the lower end of that price range must be questioning their viability!

But..... Now we have left the EU! So, we need to review our agricultural policy, don't we?

The government need to wake up fast! (A tall order when most of them don't have any real understanding of how food production and the supply chains really work! They are qualified in administration and politics which is a world away from the big picture. They are good at telling us how good they are at improving policy for us, well now it is time for the ones who do have an understanding of the real issues to "walk the walk").

I guess that we are also being compromised by the environmental policies that are emerging to help us lower our carbon footprints.

We can't really have any issue with that but..... We have to be able to feed the nation and whilst the organic farmers, extensive farmers, and niche producers have a place, re-wilding and conservation projects are also important. These systems are less productive and realistically cannot produce enough food to satisfy our UK population.

We must support all of our producers and that should include the smaller ones who are currently being squeezed out by poor prices and lack of re-investment capital. So maybe the government should start by taking one step back and looking at a sustainable long-term plan for UK agriculture that allows both the production and environment to flourish. Perhaps they are already doing this but if so, how long does it take to publish a change in policy and its detail of operation and support?

Finally, to anyone who thinks that this is too much to ask, no it isn't, we owe it to ourselves, our children, and our planet, so it is a mission that we surely have the education and intelligence available to succeed.

PS: One good piece of news is that this year's sugar beet crop is much larger than last year and even though Trident Feeds have committed 70,000 tonnes of pressed pulp to a new giant AD plant there should be a good supply.

September F 1 Ignition

F 1 Ignition is a great well proven rehydration drink for fresh calved cows. The new version features double the soluble calcium which now means that the cow will drink 20% of her daily requirement of highly soluble calcium within 10 to 15 minutes of calving. The Premier Nutrition version features a new flavour but we have decided to go back to the vanilla cream one from September 1st.

Currently there are some supply issues with this product due to a shortage of Dextrose. This has also precipitated a price increase by Premier Nutrition and there is a flat rate increase of £10 per bucket with immediate effect! I have ordered more stock but it would be advisable to order minimum 3 bucket lots for direct delivery asap as a strategy to avoid running out!

We are hoping that we should be able to return to a better situation in the new year but I would budget for January to remain tricky!

Target Growth Rates for Holstein Heifers

Holstein heifer calves weigh typically around 40Kg and certainly when we make allowances for genetic type and breed variation the modern target calving weights of say 660 Kg are not that unrealistic. Okay, some of you would say that 660 Kg is a bit ambitious and I guess for smaller types we could be looking at say 620 Kg but why is it such an important target?

When a heifer calves her skeleton and muscle reserves of minerals like calcium, magnesium and phosphorus are about as good as they will ever be. This is borne out by looking at the bones.

Young animals have much more solid bone structure than older animals. The bone cavity is smaller and the bone tissues are much more dense. The older animal has more of a “sponge structure” to the bone and the younger ones are more solid.

The picture below clearly shows the open sponge structure that we see. The bone maintains its rigidity and strength (although it is more easily broken).

The animal mobilises minerals from its bone reservoir for milk production and maintenance and replaces the reserves from its diet using a different metabolic pathway, but it never quite keeps up and so over time the bone reserves start to diminish.



Image courtesy of Patrick Siemer 2008, CC

This is why it is so important to maintain good mineral nutrition throughout the growing stage of the heifer's life as well as after she has joined the milkers.

This means that the mineral content of a heifer bone is usually much better than that of say a fourth lactation cow which may have bigger bones but they will be lighter indicating that the mineral reservoir is less!

If we can grow our heifers for better frame (skeleton) development without the becoming too fat, we will create a larger reservoir of mineral at the start of her productive life. This will improve her

chances of living longer, reduce her chances of succumbing to milk fever, improve her general health and immunity and should support production of milk.

“The main reward for achieving this target is more milk during the cows extended productive life which will also reduce the animal’s carbon footprint significantly.”

If we can assume a target calving age of say 23 months and that 660 Kg target calving weight, we have 700 days to grow 620Kg and that is a target growth rate of 0.9 Kg daily liveweight gain.

This should be achieved using a low starch and sugar feed supplements (Maximum 28%) whilst maintaining overall dietary protein levels at @ 17% after the first calf creep feed is progressed to a rearing pellet at say 15 weeks.

Traditionally British Friesian cows were fed 14% protein concentrates on straw systems and they achieved their target weights of 525 Kg at calving but suffered from internal fat deposits which usually inhibited performance.

The table below shows typical weight targets for a modern Holstein Friesian heifer.

It is evident that the target of @ 660 kg at 23 months is worth achieving since the heifer will produce a better performance under less stress than her smaller counterparts.

There is some debate as to the optimum daily liveweight gain targets.

It may be more appropriate to drop the level from months 4 to 10 to 0.8 Kg per day and increase the rates from month 15 to 22 to 1.0 Kg per day.

This tactic would better reflect the expected performance responses after calving. Achieving a 15-month 470Kg target weights at bulling is very ambitious but improves the ease of the first pregnancy and reduces calving problems.

Revised Target weights for replacement heifers

Age (months)	Target weight (kg)		Holstein
	Historic (British Friesian)	Modern high merit (Holstein)	Liveweight gain per day
0	40	45	1.1
4	125	135	1.0
10	245	315	0.9
12	285	375	0.9
15	345	455 - 470	0.9
22	495	645	0.4
24	525	675	

Grazing vs. TMR Profitability

New Zealand Grazing (Paddock Grazing) vs All Year Round TMR.



About 50 years ago in the mid 1970's ICI published a booklet which looked at all aspects of grassland production and use in the UK.

They quoted two grazing systems, Rotational grazing once every two weeks, and Continuous grazing which is only free from livestock for a maximum of two or three days at a time. Modern systems have developed to a much more progressive level which has been gradually honed to secure better profits.

Dairy farm profitability is a constant focus of attention especially when the gross margins being achieved average around 1.3 to 1.6 pence per litre (source ABC May 2021).

Profitability measurements are relative to specific criteria. Many dairy farmers looking at gross margin per litre as a key guide to profitability. True profit would go one step further and include the fixed costs.

Gross margin or true profit per hectare or acre if you prefer, is probably a more accurate reflection of farm profitability because the primary resource on any farm is the land, not the cows! ABC quotes gross margins of £1882 per hectare for spring calving (grass fed) herds and £2226 per hectare for all year calving (Semi-TMR and TMR fed) herds. Autumn calving (TMR fed) herds are quoted at £2447 per hectare.

There are many other factors that affect the choice of system and there is no judgement to make on what is right or wrong because each farm has its own unique set of conditions, but it is worth considering the grass-fed systems a bit more closely.

The New Zealand system is a rotation-based grazing from variable sized grass paddocks with relatively low supplementary feed inputs. It's going to be different in every climate, but the key objective is to get cows back to grass that is at an ideal stage of growth for optimum rumen fermentation and milk production.

By managing the cows in paddocks, the grass quality can be maintained at a consistent quality ("D" value), and the balancing buffer feeding and parlour fed compound can be a fairly constant

composition. Management of the grass should be to avoid variable pasture where some areas are very mature and under-grazed and other areas are preferred and over grazed. Most cows will rest on grass that has been grazed rather than lie on fresh grass.

1. Good grass managers will be busy. Measuring the height and quality of the grass available as the cows move from paddock to paddock. Target grass height should be around 10cm at entry level if the cow is to achieve her maximum intake. Entry level should not really be below 8cm or performance will be compromised.



2. Use the resulting calculation to adjust for the number of cows and their available intake. Stocking rate will also vary according to the site class (1 is prime fertility and 5 is extensive poor fertility). Good site classes can support more growth and heavier stocking density. A Site class of 5 could be stocked at 6 cows per hectare for a few weeks in early spring say to mid-May and maybe 5 cows per hectare to late June dropping to 2.5 cows for the summer. Weather patterns will change this dramatically as we have seen with the grass flush points this year (2021)
3. Offer the right amount of grass by using electric fences on a day-to-day basis. These fences will allow management adjustments so that if there is a period of reduced growth the area offered can be increased because the grass yield of dry matter would be less, conversely, in times where there is a flush of growth a smaller area can be offered.

Water troughs should always be within easy reach and sited on well drained bases.

Cow paths should be wide enough to cope with a good flow of traffic and be foot friendly with a good grip soft surface (no sharp stones).

The system suits smaller spring calving breeds and cross bred cows where the grazing season is long and winter housing periods are short. There is some thought that suggests that as global warming extends the season in the more northern parts of the UK that this system may become more attractive.

Modern techniques have made the system more attractive by extending the grazing season for a few extra weeks in the autumn and advancing the turnout by a few extra weeks in the spring. The MDC published figures showing the relative difference in forage costs between Grazing a 5-year ley at £205 per hectare vs a 3-year for a grass silage ley at £426 per hectare and a grass silage one year ley at £568 per hectare. The figures are now out of date but the difference is still relevant.

They also point out two strengths that underpin the success of the system:

- Grazed Grass is by far the cheapest feed so don't use a machine if your herd can harvest it more efficiently for themselves
- Grazed grass has a higher digestibility and better intakes than conserved forages.

Extended grazing can be achieved by rotating the grazed areas for longer periods in the autumn. MDC suggest moving from around 20 days in a typical August to say 50 days by late September. To avoid poaching the grazing times can be shorter and the gaps can be topped up with silage. The system sounds attractive because it means that there is less overall reliance on conserved forage and bought in concentrates.

Trials at the Crichton Royal farm at Dumfries showed that grass could be used on an extended grazing system from October until early December. The grass was analysed to show 11.5 ME, 22% CP and 14% DM prior to grazing.

The key points revealed by the system were as follows: -

- Grazing replaced 3 to 4 KG dry matter from silage per cow per day.
- Optimum grazing time was between 3 and 4 hours per day.
- There was a loss of 15% sheep grazing days on the fields that were grazed by cows.
- Milk production dropped by 1-2 litres per cow per day when the grazing stopped.

The Scottish researchers concluded that the autumn extended grazing can either maintain concentrate levels and improve milk yield and composition or reduce concentrated and maintain cow performance. They suggest that extended grazing could be used to improve profitability by saving the cost of between 12 and 14 Kg of silage per cow per day and improving yield and milk quality.

Conclusions:

There is much more that should be considered if the grazing system is the option of choice. A SWOT analysis should be interesting.

Strengths:

- Simple system.
- Low fixed costs. The need for expensive buildings for housing is much reduced. All the cows really need is a shelter and a dry standing feeding area for buffer feeding and winter silage feeding.
- Lower machinery costs.
- Lower labour costs.
- Low feed costs. TMR systems rely on much more bought in feed to achieve higher yields and to maintain health and welfare of the herd of higher genetic merit cows.
- Image and carbon footprint. Both controversial aspects of production. The perception that cows in fields have a better life than cows in buildings is based on the ignorance of the media and the public! However, it cannot be underestimated. The perception that the grazed system has a lower carbon footprint than cows that are intensively managed in a building is also questionable. The source of feed and the extra milk can mean that whilst the carbon footprint per cow may be more for a TMR fed cow than a grazed cow, the carbon footprint per litre is generally less.

- There are perhaps other benefits in that the smaller type of cow used in the system has a lower maintenance cost and is arguably easier to keep healthy and fertile.
- Environment. The ideal temperature for a dairy cow is only 10°C, the open-air existence makes this much easier to achieve apart from hot summers where shelter, a good water supply, and air movement is still essential for cooling.

Weakness:

- Only suitable for well drained pastures to avoid poaching.
- Expensive to set up the correct infrastructure. The system requires a good, easily cleaned water trough network sited on a clean and or well drained collection area to avoid excessive walking distances for cows to drink. There will also be require a well-maintained fencing and electric fencing system. There is also a need for a good soft surface well drained cow track network to and from the parlour.
- Not easily suited to robotic milkers due to distances from the units.
- Lower yields per cow.
- Lower output per cow and per hectare (see above).
- Often lower gross margins per cow and per litre. Efficient grazing systems may achieve better figures though!
- Weather disruption. Variability in weather on a day-to-day basis can result in variable feed intake and necessitates a covered feed top up area in times of wet or cold weather and a cooling system in waiting areas in the summer.
- Lush grass can be managed throughout the season to supply a high digestibility, and a high intake but as work in the mid 1980's by Professor David Leaver at the Crichton Royal College farms clearly showed, rumen acidosis is a side effect and cows gave more milk when they were offered a buffer feed.
- Poor mineral nutrition (see below)
- Debateable cow comfort. There is a perception that cows prefer to wander about a field until they find a comfortable place to lie down and chew the cud or rest. A few years ago, one of my high-profile farms decided to convert to an organic system. The required grazing periods meant that the cows had to be turned out to grass in late March. The farmer opened the barn doors and the staff helped him to usher the cows into a large field right next to the shed. The cows spent the rest of the day standing by the gate bawling to come back into their nice airy shed with comfy cubicles and easy food just over the feed barrier. This continued for nearly two weeks! It didn't matter how far away the cows were sent to pasture, all they wanted to do was to come back in. Eventually they got the hang of it but then they were offered a choice. The cubicle shed doors were left open and feed was left in the trough. They were then sent off to the grazing field of choice and left to decide if they wanted to walk back to the shed or spend time grazing in a nice sunny field with plenty of fresh grass. By lunch time all bar 3 cows out of 400 were back in the shed! So much for the public perception of what cows prefer. They should also see images of cows trying to find shelter in the rain!

Opportunities:

- The chance of reducing labour inputs and cutting back on feed bills, is a big lure for many farmers.
- The simplification offered by using less machinery (contactors can fill in the gaps if needed).

- After fixed costs are included there is much evidence to show better gross profits where the farms are suited to the system!

Threats:

- Reduced output and possibly profits.
- Less management control over weather effects.
- Poaching pastures and drinking trough areas.
- Variable grass growth.
- Steeper lactation curves when daily temperature and rainfall is more extreme.
- Potentially more foot issues when tracks are too rough.

I don't think that the choice between TMR and intensive production with Holsteins and "New Zealand" grazing is always an easy one to make.

I am aware of some successful hybrid systems where the dry cows and fresh calvers or cows that are awaiting a successful pregnancy are housed on specialist diets, and then put out to a grazing regime in later lactation. This seems to work quite well for Holsteins and higher yielding cows. Mineral nutrition is of key importance, most grass other than certain limestone or chalkland pastures, is very low in calcium. Long term leys tend to be a bit better.

The lactating cow will need typically between 120 and 160 grams of calcium per day and a grass-based diet will fall well short of this:-

Say 15 Kg grass dry matter supplies between 0.45 and 0.7% calcium per Kg DM this equals 67.5 to 105 grams Generally high yielding cows will receive enough cake to make up the shortfall when the pasture is good. Low yielders on low intakes of cake will not! They all mobilise calcium from bone deposits but if it is not replenished well enough the bone reserve will diminish more rapidly. This shortens the life of the cow, make her more prone to milk fever at calving and can increase foot problems and induce lazy cow syndrome.

Magnesium under supply is also a bit of an issue, more often in the spring and the autumn. Short term leys tend to be short of trace elements as well!

The answer is to offer a buffer feed containing a good base of mineral supplement or, if this is not possible offer mineral licks throughout the grazing period. They are not particularly low cost but they are effective and actually good value for money. There is a large choice of good mineral supplements and licks available and F1 also have a range. Regardless of the final choice, and purely on the grounds of reducing health costs, they are definitely worth using.



Raw Material Markets

We still have shipping issues, firm fuel prices, increasing worldwide demand, oversubscribed port capacity, COVID-19 pandemic, international crop production and the usual issues of politics, weather and currency. These have all conspired to make life unpredictable and generally tricky. There also seems to be a slow response from certain sectors to react to the changes brought about by the pandemic.

The last week of August saw the soya complex about as bearish as it had been for months with ex-port prices hovering around £360 per tonne for HiPro Soya. When the US crop report came out and revealed that plantings were about 55,000 acres down on the March report but yields are better than expected, the brokers had some fun taking profits but now the prices are currently roughly back to where they were on June 30th.

Current Soya prices are hovering around £360 ex-port spot to £347 for November - Jan 22 and £339 for Feb - April 22. It was £295 and £296 ex-port a year ago!

Current Maize prices are also hovering around £238 ex-port spot to £222 November – April 22. It was £180 and £167 ex-port a year ago!

Current London Wheat Futures are around £191 ex store spot and drop to £195 January 22

It was £169 and £172 ex store a year ago. I would imagine that as the harvest gets closer there will be some pressure on maize prices to drop much further.

The wheat futures have firmed considerably since June due to lower-than-expected harvest returns on the world markets although in the UK after some crop failure of winter wheat due to the wet autumn in 2020, we have generally seen a good harvest with spring cereals doing very well indeed.

The difference in value between Hi Pro Soya, IMSA Soya and Rapeseed Expeller meal is not reflected in the prices. **Why would anyone buy IMSA Soya at that money? (see below).**

This little table is simple but it shows that difference quite well! Note that whilst Rapeseed meal seems fairly cheap, Argentinian Soya (IMSA) and Low Pro (also IMSA) are more expensive than Hi-Pro Soya! **Optigen's** microbial protein generation and truly available methionine content would make them all look expensive!

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	382	89	429.21	13.8	31.10	52.53	7.27	26.82
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	565	90	627.78	13.6	46.16	48	11.77	41.32
NovaPro	330	88.5	372.88	13.1	28.91	34.83	9.47	29.14
Rapeseed Ext Meal	285	91	313.19	11.8	26.54	37	7.70	25.21
Rapeseed Exp Meal	268	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	289	90	321.11	14.5	22.15	34	9.44	25.71
Dry Maize Grains		90	0.00	15	0.00	28	0.00	0.00

Includes @ £20 for on farm prices give or take! Prices on 3rd September 2021

Good buys still includes Molasses, which looked fairly pricey until everything else caught up and overtook it. **Molasses** is both sustainable and reliable when compared to most other liquid feeds. In our view there is no better way of encouraging intakes of buffer feeds than to add some molasses. Molasses will also improve the fermentation of the rest of the feedstuffs in the rumen by aiding the growth of cellulolytic and proteolytic bacteria.

Bullet Points

- Check out our website for **F1 Ice Gold** state of the art maize silage and wholecrop additive to give great results by dominating preservation and dropping temperature fast.
www.lakescot.co.uk/f1-ice-gold/
- With mineral prices on the rise, we are encouraging our clients to book some orders just for September sooner rather than later. We will be tendering for our mineral range for the period after the end of this month. But it may be wise to take some cover now!
We offer a great bespoke and standard design mineral supplements available in the UK just now. We are using new computer formulation models in conjunction with our suppliers to offer the best availability of trace elements at the most competitive rate.
The latest **F1 TMR Dairy 21** is one of the best dairy minerals available anywhere for the money!
- It's worth repeating that you could check out our website for rumen buffers for more on dealing with acidosis www.lakescot.co.uk/rumen-buffers/ The dividends for good buffering are always better rumen function and better milk and milk quality output.
- **Early warning**. We were working on a sales campaign for our new Britannia Calf Milk Replacer range. Current tight availability of raw materials means that we have postponed this but if you would like to give the best calf milk replacer in the world a try, please give me a call! Meanwhile, we have been looking at the need for better creep feeding and I am actually quite excited by just how good this should be! This calf starter cake will give us a major step forward in foundation nutrition for a more productive life.
Skim milk powder continues to firm so early ordering is advisable!
- **F1 Yeast** has some more EFSA proofs to show its superiority to other strains. We will also be promoting F1 yeast over the next few weeks because the approval now places this product as the top choice of any yeast supplement in the UK as we go to press.
The web link is as follows: - www.lakescot.co.uk/f1-yeast/
- **Check out the new F1 Dairy Blueprint on the website, we have started circulating hard copies by personal visit because there is a good excuse for a catch up!**
www.lakescot.co.uk/the-f1-dairy-blueprint/

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.

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