



Contents

- Introduction
- Stress and Inflammation,
- Lameness a man-made problem!
- Managing Cryptosporidium.
- Acidosis in calves
- Mineral market update.
- Commodity market update.



Introduction

The evolution of our industry is a process that is driven by our drive to become more efficient, adjust our approach to carbon footprints, look after production, health and welfare and manage our profits.

Farming is probably one of the most diverse professions of any business, the skill set needed to manage all aspects is just about impossible for a single individual to handle, so the key to success is delegation of certain key tasks, I e: - accounting, bookkeeping, veterinary interventions, foot trimming, etc:

The need to react to all of these factors and many others that affect our business is all of this evolution.

Currently, the market prices offered for milk and meat, have focused more attention on cost efficiency. This has raised some interesting questions.

- How does cutting back feed additives affect cows in the medium to long term?
- Does genetic programming affect or limit what I can do to maintain animal health and fertility?
- How do we quantify the effects of change financially? Whilst milk production and quality and growth rates for beef are fairly easy to quantify, the other effects are not!
- Does the feed supply industry understand or even care about farmers needs to maintain a long-term profitable business? If they do, what are they doing to help with the current effects of pricing?

A recent conversation with one of our suppliers highlighted the fact that most of the people in the industry are now younger than me! This is hardly a revelation but they have surprisingly little knowledge of how we managed similar issues in the past.

The laws of economics do not change! (The law of "Price Elasticity of Demand").

The lessons learnt may have been forgotten by some but I can confirm without any doubt that when costs are increasing as they are right now, production will reduce and this will be followed by a reduction in supply. This will be followed by an increase in demand and then farmers will have to be paid more for what they produce as an incentive to increase supply to fill the empty shelves!

So, how long is the time frame? I think we can expect a slow lift in milk and meat prices over the summer but we could see a more meaningful lift in the autumn.

I guess that means that if you can hold off cutting back on those supplements that you know you included for all the right reasons, there will be a good reward later in the year!

The most challenging of the supplements at this time are probably the protected fats which are now higher in price than they have been within my memory! (Which goes back quite a long way!) these prices highlight the fact that we can achieve better use of energy in other ways so maybe its time for a conversation?



This newsletter talks about lameness Cryptosporidia and Acidosis which in common with many other ailments results in animal stress. **“There is no doubt that stress will have a major impact on any livestock business so the sooner we build in strategies to deal with it the sooner we can benefit from the boost in productivity that this will give!”**

We now know that stress and inflammation frequently occur together with inflammation often being one of the consequences of stress. Heat stress is probably the most talked about form of stress but stress can be caused by many other factors. The negative affects of stress and inflammation are huge, and it is most definitely becoming a major focus of research and discussion as we move forwards. Stress affects calves, followers, dairy cows, beef and even sheep.

It doesn't take a genius to work out that this is something that we have got to look at more carefully. We already know that there is much we can do to make improvements from a simple diet adjustment to management routine reviews, re-considering building and farm track designs,

Lameness is a condition of our ruminant stock which we should strive to eradicate. It is responsible for 28% of the annual cull in our UK dairy herd. Most pressing of all it is a condition which the public will not accept. This will lead our buyers to demand that we do more to eradicate this condition from the livestock industry. Sounds like a tall order, doesn't it?

When you consider that for the most part, lameness is a result of flawed management systems perhaps we are being given early notice to rise to the challenge by auditing our procedures and looking at some new science that can help us manage this condition more successfully.



I saw a great little summary of the steps we need to take to reduce the risk of and manage Cryptosporidium incidence in calves last month. There is a bit more to add!

The focus on acidosis is normally aimed a dairy cows that have just been turned out to grass full time and the need to use buffering agents to prevent acidosis. Calves can also suffer from acidosis and it can affect lifetime performance so I have focused on simple prevention.

Stress and Inflammation

Stress and Inflammation

This is probably far more important than we had ever considered.

Heat and humidity is now well understood to have a major effect on stress. We now also know that the negative effects start to occur at much lower temperature and humidity than we originally thought.

The two graphics below are courtesy of **Cargill Nutrition** and **Equaliser Cool Cow** they offer a great summary of the symptoms and effects of heat stress on dairy cows.

Heat stress symptoms are not always seen but **signs to look for are:**



Impact of fluctuating temperatures on fertility: as temperature rises fertility drops

When?

Fertility begins to decrease from

14°C

A heat stress event from
3 weeks prior to 3 weeks after
insemination negatively effects fertility

14°C

Increasing from 14°C to 22°C:

5% less cows present for service

Conception rate reduces from 39% to 33%

6%

20% cows slip a cycle

22°C

Fluctuating temperatures cause cows to alter their normal daily routine, with changes to behaviour which can negatively impact on their welfare. Just like humans in the heat, cows' appetites drop, feed intake is lower, and therefore production levels are compromised.

Increasing from 14°C to 27°C:

8% less cows present for service

Conception rate reduces from 39% to 24%

15%

43% cows slip a cycle

27°C

Costs:

£16 on a herd basis by 22°C

£36 on a herd basis by 27°C

The figures quoted on costs are the most recent available and are reckoned to be a conservative estimate of the true costs.

The chart below is a standard table by which a simple cross reference between temperature and humidity, we can determine quickly just how much air conditions can affect the cow.

In the UK it is unusual for this to be a problem but in summer, there are days when it can make a big difference.

Mild summer stress Light Yellow will not make much difference but cows will actively seek cooler places to stand and intakes will drop, so yield can start to fall by up to 2 litres.

Summer stress (Orange) is enough to have a lasting effect on performance. Not only do the cows need to be cooled they are using much more energy for maintenance. They will be seen seeking cooler places to stand and their breathing rate will increase.

Milk can fall between 2 and 6 litres Full time access to fans and or cool water misters, and plenty of clean fresh water is essential in these conditions. Shady places will be actively sought by the cows but good ventilation is also important.

Severe stress will be very noticeable because cows will be panting and not willing to move. They will need to be gradually cooled using water misters, soaking pens, cold air fanning systems, or ventilation tubes. Failure to treat the condition can result in death, usually from heart failure.

The measurements needed to calculate heat stress can be done very quickly. A simple thermometer and humidity gauge is all you need.

I have a specifically designed pocket-sized meter that will quickly give both readings and then calculate the stress ratio.

These little gadgets are so good I will try and find out if I can get hold of a few and see if we can provide them cheap or even free!

Summer Stress																	
Temperature	Relative Humidity																
°C	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	Peak Temp °C
22	65	65	66	67	67	67	68	68	69	69	59	70	70	70	71	71	18
23	66	66	67	67	68	68	68	69	69	70	70	71	71	71	72	72	Humidity
23.5	67	67	67	68	68	69	69	70	70	70	71	71	72	72	73	73	84
24	67	68	68	68	69	69	70	70	71	71	72	72	73	73	74	74	Stress Index
24.5	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75	Low
25	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75	76	
25.5	69	70	70	71	71	71	72	73	73	74	74	75	75	76	76	77	
26	69	70	70	71	71	72	73	73	74	74	75	76	76	77	77	78	
26.5	70	70	71	72	72	73	73	74	75	75	76	76	77	78	78	79	
27	70	71	72	72	73	73	74	75	76	77	77	78	79	79	80	80	
28	71	71	72	73	73	74	75	76	77	77	78	79	79	80	81	81	
28.5	71	72	73	73	74	75	75	76	77	78	78	79	80	81	81	82	
29	72	73	74	75	75	76	77	78	78	79	79	81	81	82	83	84	
29.5	72	73	74	75	75	76	77	78	78	79	80	81	81	82	83	84	
30	73	74	74	75	76	77	78	78	79	80	81	81	82	83	84	84	
30.5	73	74	75	76	77	77	78	79	80	81	81	82	83	84	85	85	
31	74	75	76	76	77	78	79	80	81	81	82	83	84	85	86	86	

When an animal becomes stressed one of the first things that happen is increasing cell stress.

The work of Professor Lance Baumgard is now well known.

He has proved that the cells that line the gut wall for example are normally tightly crammed together and joined to each other by ligands (a bit like elastic ropes). When the animal is stressed some of the ligands can slacken off creating gaps between the cells wide enough for invading pathogens to enter the body and start creating havoc. This makes the animal susceptible to increased cell counts, mastitis, actual disease infections like salmonellae and e-coli.

This type of inflammation is not just limited to the cell membranes that line the gut. When other tissues in the body become inflamed, they don't work properly so damage and infection becomes more likely in the udder and the reproductive tract.

Stress caused by poor diet balance is more common when animals are fed on more intensive rations. These diets set up the perfect environment for even mild acidosis. Even when cows are offered a diet comprising ad lib spring grass, the digestibility and sugar content of this forage is so high that the resulting frenzied bacterial activity in the rumen and hind gut will set up perfect conditions for acidosis of varying degrees of severity.

This will be mentioned a few times in the next topic on lameness.

If we really want to address the dietary element of stress without jeopardising the need to feed high density diets, we will need to consider using the following tools and balancing the basic diet more carefully.

- Ensure that the diet contains enough NDF (Dairy cows need around 6 Kg minimum)
- Do not exceed a starch sugar content of normally 25% unless using high grain maize silage or wholecrop when you can work up to 28%.
- Try and achieve a minimum of 40% forage, 50% is much better.
- Use clean water in the TMR added on the day of feeding to target @ 40% dry matter. (some farmers go as low as 37% and in some countries, they go high to 55% provided there is great access to plenty of clean water near to the feeding passages.
- Use rumen buffers, we like **Acidbuf**, **Vitalbuf** and **Equalizer Cool Cow**.
- Use **F1 Yeast** (even if the buffer already contains yeast). You will always get a boosting effect on production from this yeast but it will also raise rumen Ph by increasing populations of lactic acid utilising bacteria in the rumen.
- Use **Optomega Plus**. This product is a very rich source of the two key and only **essential** fatty acids EPA & DHA, they have been shown in many trials to improve membrane integrity and health and therefore show major benefits on pregnancy rates and mammary health resulting in more milk.

This product is without doubt an endorsement of one of the key benefits we found back in the 1980's before ruminant fish meal was banned because no one could find a test that distinguished fish protein from other animal protein!

Lameness a man-made problem!

(Abridged version. Full version by e-mail and on our website at: lakescot.co.uk/category/news/)

Each year the SFT (Society of Food Technologists) a UK based group of animal nutritionists, animal health practitioners and scientists and researchers; have a ruminant focused meeting.

This year we had a virtual meeting with six presentations ranging from soya replacement, amino acid nutrition, government grant aid to hill and beef farmers to age at first calving, fatty acid nutrition and the effects of over feeding copper to dairy cows in the UK.

Of course, it was all good stuff but, in the question-and-answer session that followed one eminent professor indicated that the industry had to get their heads around eradicating lameness on the grounds that the public will not accept it as a common factor of production and also that lameness is down to poor management!

Now, that may be hard to accept but when you think about it, he is quite right.

Firstly, we need a list of the typical types of lameness: -

- Laminitis
- Sole ulcers
- Sand cracks
- White line disease
- Digital dermatitis
- Fractures or bone breaks
- Stress
- Mycotoxin poisoning
- Hock swelling
- Poor hoof trimming

There are probably a few others.

One of the things he said to a young farmer who had indicated how many of the herd were limping was along these lines:-

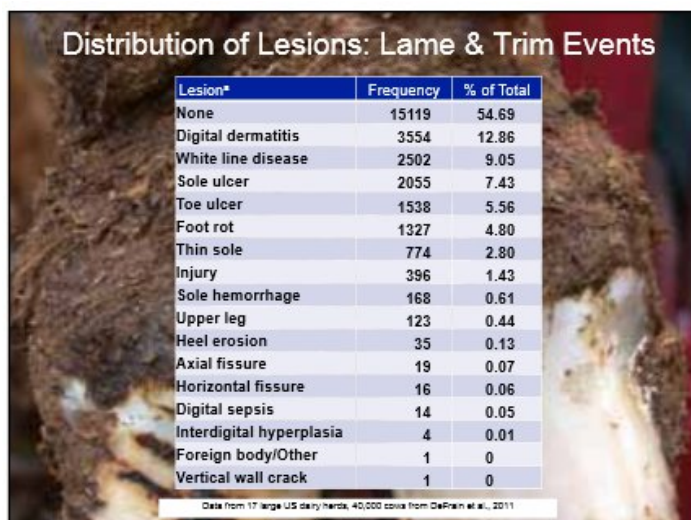
“Take your shoes and socks off and walk across the field where the cows graze, and then walk down the cow track to the parlour”.

So first on the list is the fitness for purpose of the surfaces that we expect our cows to walk and also lie on. “If it’s not good enough for us then it probably isn’t good enough for the cows!”

“Now walk around in bare feet in the mud and slurry for a week”.

We know that if the cows have dry feet for a minimum of 75 minutes, much of the external bacteria (including the Treponemes bacteria that causes Digital Dermatitis) are killed off.

The slides below illustrate the size of the problem and the three most common problem conditions.



Laminitis

Laminitis is defined as the acute or chronic inflammation of the laminae which lie immediately below the outer horny wall of the foot, resulting in great pain to the animal.

This condition can sometimes be caused by damage, septic, or toxic factors (including mycotoxins).

As nutritionists we advise that avoiding the symptoms of acidosis by careful rationing will usually be a basic requirement of eliminating the risk of laminitis.

This quote from the DEFRA website is useful.

“Research has not fully established all the links between nutrition and subsequent related lameness, but major changes of diet for cows at calving, heavy feeding of concentrates after

calving and high proportions of cereals, e.g., barley, in the diet are all thought to be predisposing factors to laminitis.

The risk of lameness problems related to feeding can be reduced by correct rationing and forage analysis.”

I think that recent work looking at the effects of stress on inflammation and membrane function are also of great help in avoiding this condition.

So, “**hot**” rations (especially those fed to intensive beef and high production dairy cows;) need to be designed to buffer the effects of a rapid fermentation generating acidosis. For example, enough structural fibre, **Acidbuf & F1 Yeast**.

We also need to build into the diet enough antioxidants, essential fatty acids, and trace elements to ensure that we are covering all of the requirements. For example: - vitamin E, marine fish oil, zinc and selenium.

The list below sows some of the steps we can take to minimise the risks: -

- Avoid feeding any more than 4kg compound in a single feed to adult ruminants.
- Make sure that adequate forage to concentrate ratio in the diet never less than 50% forage (JJT).
- Allow adequate trough feeding space per animal. A minimum 66cm feed space and 10cm water trough space per cow is recommended but exceeding this is better still!
- Check the fermentation quality and acidity of silage through analysis before feeding. We often forget that the volume and strength of acids in silage will sometimes have a very negative effect on the natural buffering capacity on the cow in any normal rumination pattern.
- Use changeover (buffering) diets when moving from low energy to high energy rations.
- Provide adequate comfortable lying areas and clean bedding to encourage animals to lie down to cud and rest.
- Housing cows in a well ventilated. Well drained and light environment with plenty of room for movement and no overstocking is now deemed as best practice to avoid stress.
- Avoid excessive stressful activity for cattle.

In the beef industry, the condition of laminitis is seen mainly in the 'Barley Beef' systems where a high concentrate to forage ratio is fed in the diet. Cattle 4.5 - 6 months old seem to be the most susceptible.

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. Its always a good idea to keep cow condition at a minimum score of 2.75 and a maximum of 3.5.
- 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.

White line disease

White line disease is separation of the wall horn from the sole horn as a result of damage in the white line region.

White Line Disease is one of the commonest causes of cattle lameness along with sole ulcer and digital dermatitis.

The process that causes white line disease is often confused with laminitis but is actually a disruption of the claw horn.

The clinical signs of the disease are: -

- Pain and lameness
- 90% are in the back foot, with 80% in the outer hind claw.
- Bleeding and separation along the white line, often with pus

The disease can be prevented by a few good practices.

- Diet - ensure a well-balanced diet with plenty of NDF (dairy cows need at least 6 KG in the dry matter) from forage.
- Environment - make sure that the tracks and hard standing are as good quality as possible with no stone or skid hazards and some soft, clean bedding areas.
- Housing – Over stocking should be avoided particularly in terms of cubicles - allow one clean and comfortable cubicle per cow as a minimum.
- Routine foot inspection by a trained foot trimmer as soon as any symptoms of lameness are seen. Always seek further advice if the animal continues to be lame.

Sand Cracks

Vertical foot cracks are often referred to as sand cracks.

Not considered to be a major issue in the dairy herd they can be a significant concern especially with older beef cows.

Sand cracks occur when a vertical or occasionally a horizontal fissure reaches the midpoint of the hoof wall. This crack then acts as a hinge and the whole wall can bend.

As a fissure extends towards the lower third of the toe, it often tries to partially break away from the hoof and it is then called a thimble. This is an extremely painful condition.

Digital Dermatitis.

Digital Dermatitis has an estimated cost of between £75 to £81 per case and typically an average cost of £3000 per hundred cows per year.

Much of this cost is related to reduced yield, (infected cows make less visits to the feed trough) and increased calving interval (infected cows do not stand for bulling).

There is generally good news on the Digital Dermatitis front.

Research on heifers and field trials on Dairy cows have shown that feeding a very specific mineral and vitamin balance appears to have a very positive effect on reducing the symptoms of active Digital Dermatitis.

The same supplement also has some other beneficial side effects. It also uses a technology that has been shown to reduce mastitis, somatic cell counts and appears to enhance immune responses.

The list below is also from a presentation by Dr Nigel Cook (2019 Wisconsin Veterinarian of the year). His presentation summarises the approach of the 66 elite herd study group (which they have been using to gauge good management practice,) to preventing lameness.

The figures are interesting but what stands out is the effective use of sand for bedding and the use of rubber floors.

How Elite Herds Prevent Lameness

<i>Characteristic</i>	<i>66 Elite Herds</i>
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 CI 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

Research has shown that Zinc, Copper and Manganese have key roles in maintaining claw integrity and should be supplemented in both inorganic and organic forms. **F 1 Super Hoof** features the recommended levels of **Availa*Zn, Availa*Cu, and Availa*Mn** included at EU recommended rates to ensure a strong and viable hoof.

We have also included Biotin which has a great track record in improving hoof durability along with high levels of Vitamin E to ensure that the metabolic pathways are maintained in the best condition to bolster the cow's immune system.

Trial work continues and peer reviewed work has been published to support the integrity of this work. Of course, published research takes time but we are aware of several trials which will show that the use of this UK formula for dairy cows will indeed be solid in its approach to foot health.

Stress and Inflammation

See above. The link between Sub-Acute Rumen Acidosis (SARA), Hind Gut Acidosis and inflammation is becoming much more apparent. The use of rumen buffers and **F 1 Yeast** is a strategy worth pursuing with any intensive diet regime that is offered to ruminants.

Mycotoxin Poisoning

There is strong evidence that a high mycotoxin loading from the diet can exacerbate inflammation in the tissues where there is already a challenge. Swollen hocks is a good example.

Swollen Hocks

Swollen hocks occur when a cow's hocks are repeatedly knocked or banged against hard surfaces, or when there is prolonged pressure of the bony prominences of the hocks on a hard surface. An acute injury may occur when a cow slips as she attempts to lie or falls in a walkway.

Poor Hoof trimming.

Its self-explanatory really. But it probably accounts for more culling than we would like to admit.

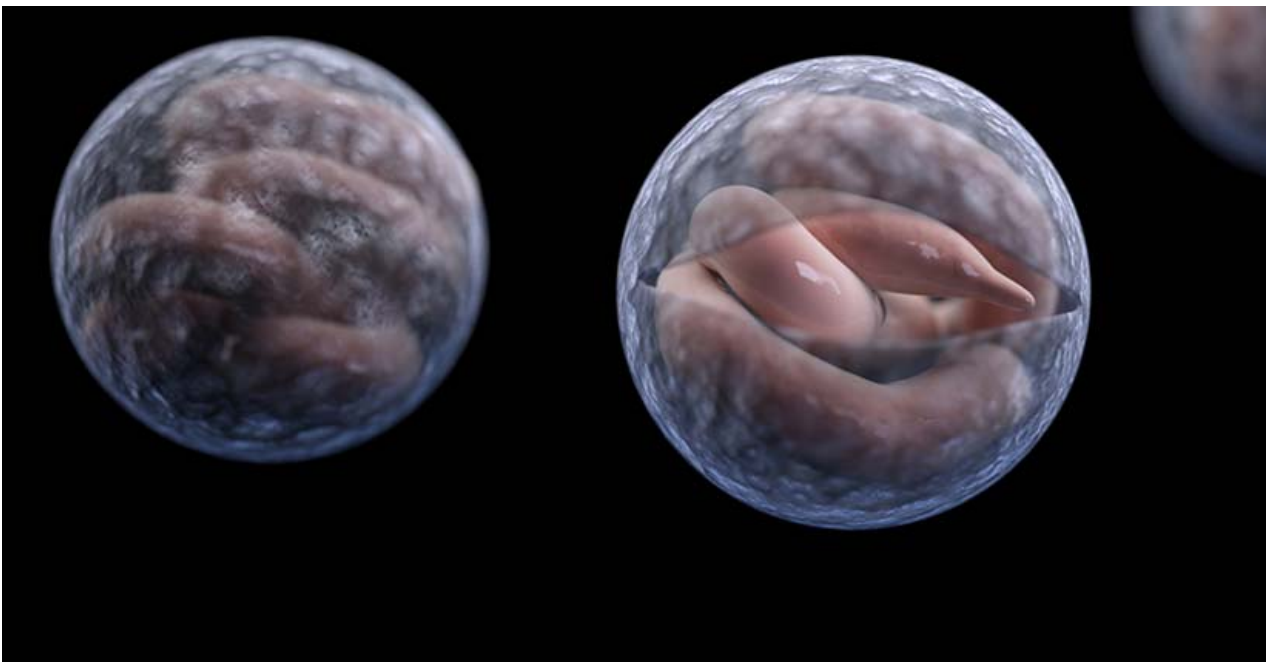
Managing Cryptosporidium

Of all the diagnosis of calf scour 40% is put down to crypto! Many farmers will have come across it at one time or other and it is a major problem.

The article featured a five-point plan and I am quite happy to reprise this but as a six-point plan because there is a fairly new, cheap, but effective weapon in the armoury!

1. Calving boxes and pens: -

I suppose that most farmers would naturally be paying attention to the environment in the calf shed but the first potential exposure to this parasite. Crypto survives in oocysts or spores which are quite hard to kill but if the environment is at all damp, this increases the chance of the spore's survival.



The first 24 hours of the calf's life is very risky, the gut lining features a more open cell structure to allow antibody absorption from the colostrum. This makes it easy for pathogens including crypto to infect the calf.

So, the best policy is to make sure that all surfaces that the calf is likely to encounter are clean and as dry as possible.

2. Colostrum: -

Okay its not directly related to crypto but since lack of enough good quality colostrum has been judged to be responsible for over 50% of all calf mortality; it has to be included.

At birth it is essential that the calf has a good feed of colostrum essentially within the first 6 hours of its life. Colostrum is normally rich in the essential nutrients and antibodies needed to protect the young calf from the environmental disease loading on the farm into which she is born.

The calf's mother will have developed a good level of immunity to these local disease challenges and will pass the immunity on to its calf via the colostrum.

Currently the recommendation is to feed 4 to 6 litres of Colostrum in the first 6 hours after birth. At least 3 litres in the first 2 hours!

Colostrum quality is important. Its specific gravity should be measured using a colostrometer. (This tells us how rich the colostrum is). The target density should be 75mg per ml of IgG

Concentration of IgG (the main immunoglobulin) in colostrum varies according to many factors, including a cow's disease history, volume of colostrum produced, season of the year, and breed. Research has shown that IgG levels vary widely from one cow to the next and range from less than 20 to over 100 mg/ml. The difference between 20 and 100 mg/mL of IgG in colostrum can mean the difference between failure and success in passive transfer of immunity.

Colostrum containing 75 mg/ml or more of IgG is considered to be a high-quality feed for new born calves. Measurement of IgG concentrations in colostrum can be very useful in managing colostrum quality and monitoring colostrum feeding practices.

Although high quality colostrum is typically very thick and creamy, appearance alone does not reliably predict IgG content.

Volume of first milking colostrum also can be misleading and is not a recommended method for estimating colostrum IgG content. In addition, although IgG concentration can be measured very accurately in a laboratory, these tests are time consuming and not typically available to farmers.

Hydrometers and refractometers can be used on the farm to estimate colostrum IgG, separate good quality colostrum from poor quality colostrum, and improve your ability to provide calves with enough IgG to attain successful passive transfer of immunity.

We recommend the use of a "Brix" Refractometer to measure colostrum quality.

The measure should target $\leq 22\%$ and anything less than $\geq 18\%$ should be rejected.

If the reading falls between 19 and 21%, the colostrum is not really good enough for the first feed.

When the reading is in this range some advisors suggest that you could use a colostrum replacer.

Many farms can freeze a quantity of selected clean good quality colostrum. If this is carefully reheated it makes a great first feed which can then be followed with the weaker mothers colostrum. Remember to sterilise any tubing and containers being used.

Brix refractometers are now readily available from good veterinary suppliers or over the internet.

Colostrometer floats (Hydrometers) can also be used to get a rough estimate of the quality in seconds.

3. Diagnosis of Cryptosporidium affected calves should be routine if the calves have a stiff tucked appearance with a yellow scour. Test kits can be purchased from most animal medical suppliers and vets. If you are not sure get the vet to demonstrate the test so that you know what to look for.

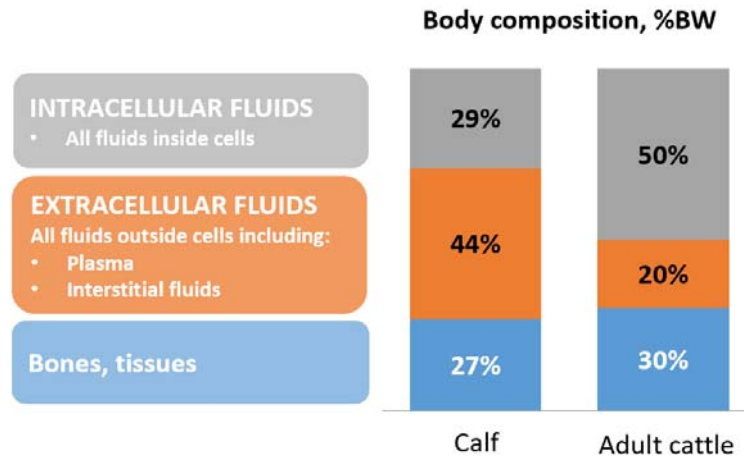
4. Any calf that show symptoms of scour needs water at the very least. It has to be clean and fresh and freely available at all times, Dosing with electrolytes (we recommend Trouw

Nutrition's **Osmofit** product which is the newest and most technologically advanced product that we have seen. Feeding electrolytes as a routine third midday feed has been shown to help calves thrive.

“A strong healthy calf is destined for a good life!”

Osmofit is available in boxes of 12 doses to be mixed at 38°C at 2 litres per calf as a “third” feed.

5. Remember Calves are 73 % water.



Sources: Fayet, Ann. Rech. Vét., 1968; Parker A.J., PhD thesis, 2004; Phillips et al., Ann. N.Y. Acad. Sci., 1971.

6. Reduce the environmental loading of viable *Cryptosporidium* spores with **Orego-Stim**. This product has become a lot more than some sort of herbalist's concoction used by some of our “off the grid population”.

Now the proofs are now without question and the published trials and adoption across the species is gaining pace. **Orego-Stim** is now exported all over the world and was the reason for a £5 million manufacturing site in the UK.

Extensive research has shown that oregano can be used to great benefit as an immunity boosting treatment but there is also evidence to show that it will reduce *Cryptosporidia* spore shedding by around 60%!

Using 10ml per calf per day for the first 10 days of life followed by a “holding” dose of 2ml per calf per day until weaning is recommended. The first 10 days is the key period and some farmers are reporting good results without using the holding dose!

When applied over a series of batches of calves followed by routine cleaning of pens and equipment, the use of **Orego-Stim** will reduce viable spores to a minimum effectively eliminating any significant challenge provided cleaning routines are maintained.

The monogastric nature of the baby calf also means that it is suitable to use whilst its rumen has not developed. There are other benefits to using **Orego-Stim**, one is improvement of appetite and that property has multiple benefits.

7. It is always worth discussing scour issues with your vet. Accurate diagnosis is usually a good call, but there is always a case for prevention being better than cure!

Acidosis in Calves

This is an issue that is rarely considered but it is reckoned that a significant number of calves will be affected by both rumen and hind gut sub-acute acidosis which will have long term effects on subsequent feed efficiency.

The good news is that by following a few simple strategies young calf acidosis is fairly easy to prevent.

The acidification of the calf rumen is to be avoided at all costs. The development of the rumen papillae can be seriously impeded`

The photographs below show the difference between more and less acid environments on rumen wall development from calves fed the same diets without using Yeasacc (**F 1 Yeast + Activator**) and not using any yeast.



The best way to avoid this issue is to follow the following steps: -

- Always make sure that the calf has access to clean fresh water (changing water fed in buckets at least once but preferably twice or more per day will pay dividends.
- Consider a Mid-day feed of electrolytes (**Osmofit**) this can reduce stress, improve immunity and improve the absorption of nutrients. Some electrolyte formulas do not balance the level of glucose with the level of salt. The ratio is critical at 1.2 : 1 failure to balance this correctly may actually induce more scour!
- Use a rumen friendly calf creep. Most creeps are well balanced but the trick is to control the levels of starch, sugar, and fibre. The levels of bypass starch and the physical presentation of the cereal will all have an effect on fermentation rates.
- Use butyrate to stimulate papillae and cellular growth of the gut wall.
- Use anti inflammatory nutrients, **Osmofit** will contain a good selection of these.
- Use calf milk replacers which are not acidified but are balanced to include butyrates, niacin and a good range of antioxidants like vitamins E and A.
- Always keep to routines and timetables.
- Stocking rates and environmental ventilation and drainage are all very important, calves need plenty of space and fresh air with a clean dry bed.
- Hygiene is now known to be an extremely important factor with regard to preventing infection and stress.

Some of these factors may not seem to be obviously linked to acidosis but we know that anything that results in stressing the calf will cause a degree of tissue inflammation. This will allow more damage to be caused by acidity both in the rumen and in the hind gut.

One feed additive that will help to offset much of this challenge is **F 1 Yeast**, the activator in this product will supply plenty of nutrients to allow for beneficial bacterial growth and there is a library of peer reviewed and published research and trial data showing how gut Ph can be significantly improved both in the rumen and the hind gut.

The picture shown earlier is a great illustration of this.

Mineral Markets

No real changes since the last newsletter in April.

Raw Material Markets

Current Soya prices are hovering around £374 ex-port spot to £371 for November- April 22.

It was £367 and £325 ex-port a year ago!

Current Maize prices are also hovering around £240 ex-port spot to £226 November – April 22.

It Was £175 and £168 ex-port a year ago!

Current London Wheat Futures are around £207 ex store spot and drop to £192 November 21.

It was £159 and £169 ex store a year ago!

If you average the two cereal spot feed costs, they are up 32% on last year.

Interesting that Hipro Soya is a similar price on the spot market to a year ago.

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?**

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
	Per Tonne	%	Tonne DM	Mj/Kg DM	Per tonne D M	% DM	Per tonne D M
De Hulled (HiPro) Soya Ext Meal	374	89	420.22	13.8	30.45	52.53	7.12
Argentinian Soya Ext Meal	366	89	411.24	13	31.63	42.4	8.63
Lo Pro Soya Ext Meal	366	89	411.24	13	31.63	44	8.32
Soypass	620	90	688.89	13.6	50.65	48	12.92
NovaPro	347	88.5	392.09	13.1	30.39	34.83	9.96
Rapeseed Ext Meal	289	91	317.58	11.8	26.91	37	7.81
Rapeseed Exp Meal	294	89	330.34	13.2	25.03	35.4	8.31
Optigen	2000	99	2020.20	36	18.52	275	7.35
Dry Wheat Grains	352	90	391.11	14.5	26.97	34	11.50
Dry Maize Grains	344	90	382.22	15	25.48	28	13.65

Add @ £20 for on farm prices give or take! Prices on 7th May 2021.

*Optigen is a delivered price, so the figure quoted above should be £7.12p per %CP per tonne DM, which makes it identical to but not as good as HiPro Soya!

Cereal futures have firmed by around £20 per tonne in the last 5 weeks. This is quite unusual for this time of year because normally as harvests approach in the summer many stores try to run down stocks to make space for the new seasons crop and the prices drop. There is still time for the seasonal price drop to kick in.

Good buys still include Pea & Bean meal, and 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.

Topical signals

- Check out our website for **F1 Evo and F1 Sprint** state of the art silage additives to give great results and dominate grass protein preservation. www.lakescot.co.uk/f1-evo/
- Current weather patterns and grass growth are proving to be ideal for Hypomagnesaemia (grass staggers). We can supply Hi Magnesium mineral supplements, buckets, and molasses if needed.
- We also 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!
- Check out our website for rumen buffers for more on dealing with acidosis www.lakescot.co.uk/rumen-buffers/
- **F1 Yeast** has new EFSA proofs to show its superiority to other strains. The web link is as follows: - www.lakescot.co.uk/f1-yeast/

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** Fax **01768 892744** Mobile **07711 034141**

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