



FEEDING USING AMINO AND FATTY ACIDS

Tim Davies, Kite Nutritionist tim.davies@kiteconsulting.com



IN THIS ISSUE

- Feeding using amino and fatty acids
- Environmental legislation
- Kite consultant undertakes Nuffield Scholarship
- Staying safe on the farm
- Antibiotic Guardian Awards

Our rationing programme has been upgraded to look at the amino acid balance of the protein and the fatty acid balance of the oil in the diets we feed on farm so that we can fine-tune rations to increase milk yields and improve feed efficiency.

The best protein we can feed our cows is microbial protein, which is produced naturally by the rumen microbes. This contains the ideal amino acid balance and exploits one of the unique features of herbivores; being able to convert low-grade protein in grass, silage and by-products into high-grade, nutritious protein in milk and meat.

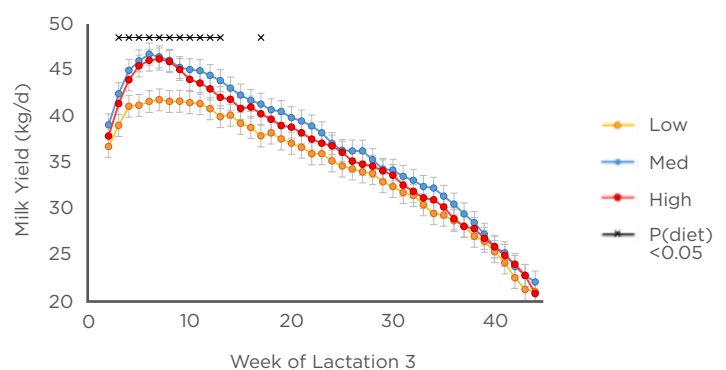
However, microbial protein cannot meet all the needs of a high yielding cow, but supplementation is expensive and ruminants are quite inefficient in how they utilise protein. Cows on a high protein diet (18% in the dry matter) only capture around 25% of the protein fed and the other 75% is excreted as nitrogen in various forms including ammonia, nitrous oxide, and nitrates. Potentially 35% of the nitrogen excreted in manure and urine is lost as ammonia and nitrous oxide gas during storage and spreading, adding significant cost to milk production as well as causing health and environmental damage. Ammonia will be targeted in the forthcoming 'Clean Air Act', while nitrous oxide is a very strong greenhouse gas, approximately 300 times worse than carbon dioxide.

Long-term trials at Reading University show that reducing dietary protein levels to 14-16% using conventional sources balanced for metabolisable protein increases capture in the rumen to 35-40%. Sixteen per cent protein diets generated very similar milk yields to 18% diets, with the highest financial returns, when the diets were carefully balanced.

We are seeing this reflected on commercial units, with some farmers feeding high starch and sugar diets at 15.8-16% protein, using rape as the main source of protein. These diets tend to be naturally well-balanced for two of the main rate limiting amino acids, methionine and histidine. However, where necessary, we can now look at balancing diets with protected methionine or lysine for greater efficiency. This has particular potential for farmers who are paid for milk protein and are using low protein diets based on soya and maize distillers.

While looking at the amino acids it is also useful to check the fatty acid levels of the diet as high levels of linoleic acid can have a significant depressing effect on milk butterfat. This is an extra refinement to quantify what we have been saying for the last 10 years. Coupled with the amino acid story, we now have more tools in the box to ration in greater detail, which is becoming increasingly important for contracts that pay on milk solids.

Summary of milk yield response in 3rd lactation cows, fed diets containing either 14, 16 or 18% protein; C.K. Reynolds et al, CEDAR, 2018. Reading University



ENVIRONMENTAL LEGISLATION – WHAT DOES IT MEANS FOR UK DAIRY FARMS?



By Nigel Penlington AgEngEnv Nigel Penlington Consulting Ltd

There is growing concern within the dairy and indeed wider farming industry, about proposals from Defra to impose a number of new laws, including covering slurry stores, with the aim of improving the quality of air we all breathe. David Cameron declared at the start of his term of office that he wanted the “greenest government ever”, but the general economic situation put some of this on the back burner until more recently. Mrs May’s parting shot of zero-carbon by 2050 is a signal of change.

Mr Gove becoming Secretary of State, at a time when Defra has also got back on its feet in terms of staff numbers, has resulted in a change of pace, meaning that by late 2018 we had a draft Environment Bill. It should have been in place by now, but MPs have had other things on their minds. The objectives of the Bill include improving air quality, restoring and enhancing nature, improving water quality and improving resource management. I would actually argue that if we improve the latter - resource management - then we start to deliver the rest by default.

So what do I mean by this? In essence farms have inputs (soil, feed, water, energy etc.) and the aim is to convert inputs into products that can be sold or reused on the farm (milk, meat, manures etc). Pollutants that cause environmental harm are simply those resources which are allowed to escape from the system. The fact is though, these have cost money, so where economically viable it makes sense to contain them wherever possible.

Ammonia is one of these pollutants. It is generated when urine and faeces come into contact with each other and is then dispersed in the air. As a gas it can damage some plants and wildlife, even in miniscule quantities. It dissolves in rain resulting in nitrogen enrichment of soils, ideal on your crops, but not on the ecology of some protected sites such as SSSI’s. Another way it causes harm is by reacting with nitrous oxides produced by the burning of fossil fuels in vehicles, power generation, heating etc. creating very fine particles called PM2.5’s. These, when breathed in, can pass through lung tissue

into the blood causing heart and respiratory problems. Just observe the numbers using inhalers. It is predicted that this will cost the country £5.3 billion by 2030 if left unchecked.

It is estimated that 88% of UK ammonia arises from farming, meaning that agriculture is firmly in the spotlight. Of this, dairy and beef cattle contribute 48%, but outdoor grazing accounts for just 7%, as urine soaks straight into the soil.

To tackle this Defra has presented its Clean Air Strategy, which includes proposals for covering slurry stores, design standards for housing and banning splash plate slurry spreaders. Also, it suggests that manures and slurries can only be spread when there is crop demand and within limits, so NVZ-type rules might apply across the board.

This brings me to the Farming Rules for Water introduced last summer, which give the Environment Agency (EA) powers of sanction in order to reduce water pollution. Their stats are again highlighting dairy as the sector with the worst track record for water pollution. These rules are starting to bite, spreading in winter and spreading on soils with high P indices are being challenged by EA inspectors.

We have to look for the positives in this situation and find ways to improve farm performance, animal welfare, crop yields and quality, whilst cutting labour, vet & med, fertiliser and other costs. It is not impossible. The Dutch and Danes are doing a lot of that already and this is where Defra and scientists are looking. The pig and poultry sectors already have this imposed through ‘permitting’.

My belief is that solutions which make the farm business more competitive and sustainable in the first instance, result in legislative and other compliance requirements being satisfied in the process. I will be working with Kite Consultants to help clients meet these challenges through improvement in areas such as housing, ventilation, slurry management, odours, carbon footprint and current hot topic, reducing ammonia.



KITE CONSULTANT UNDERTAKES NUFFIELD SCHOLARSHIP

Duncan Williams duncan.williams@kiteconsulting.com



**NUFFIELD
FARMING
SCHOLARSHIPS
TRUST**



My Nuffield scholarship is looking at how each section of the dairy industry plays a role in reducing antibiotic use on farm, the way in which both government and processor policy influences farm outcomes and how best to drive change on farm. I am hoping that out of this will emerge the next stage of antibiotic reduction strategy that will get us on par with the Scandinavian countries and leave us much closer to long-term sustainable levels.

On top of the eight weeks travel required of the Scholarship, I have been lucky to have been one of a small number that was awarded an additional study tour: the Global Focus Program - a non-stop, worldwide trip visiting Singapore, Philippines, China, Germany, Ireland and the USA in six weeks, meeting farmers as well as processors, banks and regulators. Recently, on a rice farm in the Philippines, I was told that "you can't talk about rice till you get your feet in the mud". It is true, nothing beats actually going to a country and speaking to the people there.

In terms of antibiotic use, it is important to understand how global policy is influencing our national approach. One of the things that has been mentioned time and again throughout the journey so far is the UN's Sustainable Development Goals (SDGs). These 17 goals run through to 2030 and range from ending poverty and hunger, to creating gender equality and the responsible consumption of resources. These goals and the resulting supporting documents are created through committee and expert opinions, with every country having an opportunity to input into and change final documents. The scientific and farming community has their moment to speak but, unfortunately, it is often the case that the farming industry is not present at such meetings with private sector voices represented by either major corporations or pressure groups. If we are not raising the practical realities that we face, then we are left dealing with policy centred around the theoretical.

Equally, by the time that many national plans come out, they are merely local interpretations of the wider international agreements. So, when we see restrictive environmental regulations, we are too late to have a major effect on them, as individual countries may be being held to account much higher up the chain.

From my point of view, I believe that before we can go much further we need to understand 'how much antibiotic use is sustainable?'

Returning to UK ground level, we at Kite have spent the last few years working with individual farms, processors and supermarkets to help create systems that lead to a reduction in on-farm antibiotic use. Awareness of the issue has risen over this time and we are now in a place where most, if not all, processors have antibiotic policies in place. Many farmers have adopted an extremely proactive approach, but the question remains about how best to engage with the sections of the industry that are yet to take this on board.

From my point of view, I believe that before we can go much further, we need to understand 'how much antibiotic use is sustainable?' By 'sustainable' we mean a level of consumption that will allow continued use of all antibiotics in the future for both humans and animals. We do need to start with a reduction, but long-term we should not be aiming for zero antibiotics, as we know this brings negative consequences for animal welfare. We also need to ensure that any proposed funding for this area of work and indeed continued government support for the industry references the UN SDGs and shows how we fit into this.

'FLYING HIGH FOR THE FUTURE' - KITE PROGRESSIVE DAIRY OPERATORS CONFERENCE 2020

Our industry faces challenges in the years ahead. Political uncertainty, environmental pressure, a growing and changing customer base and huge advances in technology create both uncertainty and opportunity. Never has agriculture asked so much from its young people and the 2020 Progressive Dairying Operators Conference, taking place on 2nd & 3rd March, in Warrington, Cheshire, looks to examine these challenges head on. By pulling on the knowledge of industry experts, workshop-based sessions and networking time the event looks to target younger farmers, but this is an event that will be applicable to any dairy business as it looks to the future. Put it in your diary!



**PROGRESSIVE
DAIRY OPERATORS**



Pictured: Duncan and fellow scholars at the 2018 Nuffield Farming Conference, Glasgow

What is a Nuffield Scholarship?

Nuffield Farming Scholarships started back in 1947 as a way of driving innovation and leadership within UK agriculture. Since then, many hundreds of scholars have travelled the world, meeting with experts and learning about a specific subject area. The idea is that the knowledge gained is not only incorporated into the farm or business where the individual works, but is also shared with the wider farming community via written reports and public speaking events. This year, there are 19 UK Nuffield scholars looking at topics from 'estate management' to 'circular farming' to 'value creation within supply chains'. The scholarship is not confined to the UK and has been gradually expanding across the world, this year encompassing 50 other scholars from 10 different countries.

I am hugely grateful to my sponsors; Dartington Cattle Breeders Trust and the Richard Lawes Foundation for funding this study, to Kite for allowing me this time away and to my clients for understanding that my replies to emails might be a little slower than normal. I strongly encourage everyone to consider a Nuffield Scholarship - for more information visit <http://www.nuffieldscholar.org/>

UK DAIRY DAY
11TH SEPTEMBER,
2019

Do not forget the UK Dairy Day in September, at The International Centre, Telford, Shropshire. Please do come and meet the Kite Consulting team for a coffee and a chat in our usual spot in the Coalport Suite.



GOLD CUP OPEN DAY

We were delighted to once again support the RABDF at this year's Gold Cup open day at 2018 competition winner - Metcalfe Farms' premises in Leyburn, North Yorkshire. A record 3000 people attended the event with Kite Consulting providing bacon rolls for attendees.



BECKI LEACH JOINS THE KITE TEAM



Many of you, especially the Northerners, will know me from my previous role as Knowledge Exchange Manager at AHDB Dairy. There I was responsible for developing and delivering the DairyLeader content, focussing on leadership, people management, recruitment and retention. I am delighted to be joining Kite team and to continue to support #TeamDairy in this area. I am energised by spending time with ambitious and positive people, passionate about actively influencing the success and positive reputation of British Agriculture whilst enabling and encouraging the next generation into the agricultural industry. If the hashtag did not give it away already, I can confirm I am a keen Twitterer (@leach_becki) and I hope to increase Kite's presence in this area - there is so much great stuff going on at Kite and I look forward to sharing that with you.

STAYING SAFE ON FARM

Ainsley Baker ainsleybaker@kiteconsulting.com



Did you know that while the 340,000 people that work in agriculture make up only 1% of GB's working population, the agricultural industry accounts for 20% of all deaths in the workplace? Last year 29 farmers and farmworkers lost their lives at work and 4 members of the public died in farming accidents. Moreover, behind this shocking statistic, there are thousands of injuries, many life-changing, with countless family lives turned upside down. The really frustrating part is that the things that are killing people on our farms are the same, year in and year out, and often could be preventable.

A few months ago I had the privilege of working with groups of dairy farmers who supply the Co-op. We were supported by information provided by Yellow Wellies Farm Safety Foundation. What was great about the meetings was that everyone shared their experiences and talked about ways of making their working lives and those of their team members safer. Here are some of the key points we covered:

Working with Livestock

We looked at the main risks around working with livestock. These included making sure that the working area was safe and there were good gates, crushes and handling systems, particularly given how regularly cattle are handled with TB testing.

We also talked about preventing disease and infection passing from animals to humans and the risks of working around cows with calves and bulls.

Slurry Gas

We discussed the dangers of slurry gases and how stirring slurry, particularly in unventilated buildings is hugely risky. Stirring should only be done when there are no people or animals in the buildings because Hydrogen Sulphide gas is released as soon as mixing starts. The building should be kept empty for at least 30 minutes after the work is complete because the gas is a silent killer as it is colour and odour-less.

Farm Machinery

We talked about the safe stop procedure; applying the handbrake, putting all controls in neutral, stopping the engine and removing the key from the ignition.

We talked about ensuring all PTO guards are in place and never modifying a machine.

Working at Height

Falling from a roof is something that claims many lives on farms every year, so we talked about how to make that safe by using proper lifting equipment, scaffolding and using experienced contractors. Do not be tempted to get in the loader bucket or stand on a pallet on the loader forks when you need to change a light bulb in the cubicle shed!

Electricity Lines

Being aware of where electricity lines cross the yard is absolutely essential. Tipping trailers and modern telehandlers can easily touch overhead power lines.

The Farming Help umbrella of charities has many avenues of help if you, a family member or friend is experiencing stress or undergoing emotional or financial difficulty. These charities include the Farming Community Network (FCN), the Royal Agricultural Benevolent Institution (R.A.B.I.), the Royal Scottish Agricultural Benevolent Fund (RSABI) and the Addington Fund. Other charities such as the Samaritans are also available 24-hours a day.



Chemicals on Farm

Chemicals can be a silent killer on our farms. We all know the dangers of working with pesticides and are careful around them, but commonly-used chemicals on dairy farms are also extremely dangerous. Formalin (commonly used in cow footbaths) is designated as a probable human carcinogen by the United States Environmental Protection Agency and a study in the US has linked this chemical to increased risk of brain cancer.

If you are using formalin to disinfect cows' feet then always follow the instructions on the pack when it is mixed and make sure you use it in a well-ventilated area away from where you work (well away from the milking parlour).

Children on Farms

Farms are a fantastic place for children to grow up but the farm is also one of the few workplaces where children can be present. Farms are not playgrounds, they are hazardous places and children must not be allowed in the farm workplace unsupervised.

Whilst most of us have enjoyed growing up on our family farm, it is a sad fact that farms are one of the only workplaces where children continue to die or are seriously injured. When an accident happens it is a horrific tragedy for the family and heart-breaking for the community.





Do not forget Mental Health

The mental health of farmers and those that work on farms is an often-ignored area of farm safety.

Farmers in the modern world experience the same challenges as everybody else and these contribute to stress and depression in the workplace. Farming with its ups and downs can be very stressful, particularly when you are working on your own. The Farm Safety Foundation recommend:

- Talking to friends, family or co-workers about the source of your stress.
- Scheduling regular breaks away from the farm, from a few hours to a weekend.
- Looking after yourself – eat healthily, exercise and get enough sleep.
- Finding time to relax each day, read a book, watch TV or go for a walk – even if it is just 15 minutes.

Finally, the Yellow Wellies Farm Safety Foundation website also has some fantastic resources and support for everyone that works on the farm. Make sure you keep the training for your team up-to-date, including first aid and ensure that everyone working on the farm follows good safety procedures and knows what to do if an accident happens.



KITE WINS ANTIBIOTIC GUARDIAN AWARD!

A programme, developed by Kite Consulting and Solway Vets and in conjunction with NMR, to help dairy farmers monitor and reduce antibiotic usage, has won the Animal Health, Agriculture and Food Supply Award at the 2019 Antibiotic Guardian Awards.

The Antibiotic Guardian Awards ceremony took place in Birmingham on the 27th June. It paid tribute to the work of healthcare professionals in tackling antimicrobial resistance, as part of the ongoing Antibiotic Guardian campaign led by Public Health England, in collaboration with UK devolved administrations and professional bodies.

The Kite programme has a collaborative, processor-led approach, whereby processors engage in discussion with their dairy farmer suppliers and their vets to identify which type of antibiotics should be used for treating common disorders and when they should be administered.

ANTIBIOTIC MONITORING AND REDUCTION PROGRAMME Kite

Why was AMRP Established?

- This is a collaborative approach led by processors to engage their dairy farm suppliers, using Kite Consulting as independent facilitators.
- Kite has worked with a large range of UK dairy processors, including both the largest and smallest businesses.
- The workshops and data collection have contributed to progress towards meeting RUMA's 2020 Dairy Sector Targets and monitoring that progress.
- This project has been supporting a positive image for British dairy farmers, producing demonstrable reductions in antibiotic usage across the country.

Success Stories

- **Engaging both farmers and their vets** in the discussion on which antibiotics to use for treating common disorders. Prophylactic use has been eliminated.
- **Reducing HP CIA usage** – supported by the change in their tractor standards, we've been able to reduce HP CIA usage and highlight the difference in active ingredients concentrations in certain antibiotics to that

Progress Toward RUMA Targets

HP CIA usage (per 1000 cows)	HP CIA usage (per 1000 cows)	HP CIA usage (per 1000 cows)	HP CIA usage (per 1000 cows)	HP CIA usage (per 1000 cows)
0.87	0.16	0.45	0.63	22.21

1. Antibiotic purchase history is collected from the farmer's veterinary supplier following a data release consent form being completed.

2. Analysis is completed for comparing towards RUMA 2020 targets and the regional and group average.

3. Data usage is reviewed to ensure a high quality of data, together with a high priority priority of identifying and addressing any data quality issues and the treatment routes.

4. Farmers receive individual feedback that highlights their performance and compares it against industry benchmarks. This information is also shared with the farm vet.

5. Facilitated workshops allow discussion and issue management from all perspectives. As farmers and their vets are involved from the start, both sides take the lead on each other's perspectives during these discussions.

6. Farm management changes are discussed with vets and the farm team. The results are compliant with Best Practice Farm Assurance standards.

Logos: miller, op, Longley Farm, Solway Vets, TREWITHEN DAIRY, Arla, LACTALIS



For enquiries regarding the information in this newsletter please contact:

Kite Consulting | The Dairy Lodge | Dunston Business Village | Dunston | Staffordshire | ST18 9AB
Tel: 01902 851007 | Email: enquiries@kiteconsulting.com

© Kite Consulting 2019 All rights reserved. Kite Consulting endeavour to ensure that the information contained in this document is accurate and will not in any event be liable for loss, damage or injury however suffered directly or indirectly in relation to the information held within this document.