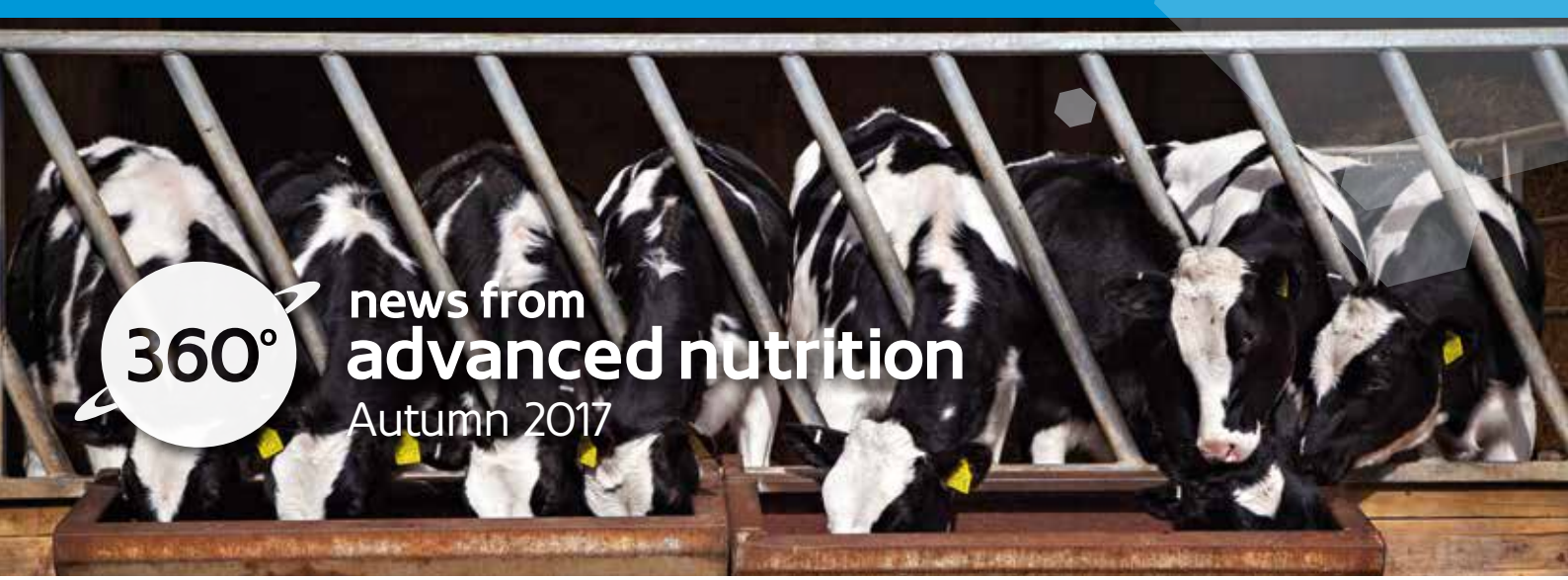

360° news from advanced nutrition

Autumn 2017

Autumnal Optimism?

I attended the UK Dairy Day at Telford last week and all I can say is what a difference a year makes. There was a great buzz and atmosphere and most of the conversations were laced with optimism, a stark contrast to last year.

UK milk production is Y.T.D. 0.5% below last year but July was 1.8% over last year, no doubt fuelled by the recent increases in farm gate prices. Many standard contracts are starting to nudge above 30ppl. Many conversations now centre on "pushing for milk" let's hope we don't go too far.

The weak pound is still helping, 1.14 EUR:GBP as I write, up from 1.07 just a month ago. The Dollar is trading today at 1.34 up from 1.29 a month ago. A slight improvement on both counts but we are very much still in the "weak" bracket.

Welcome news is that feed prices remain relatively stable and should see little or no increase over the winter period. Beef and Lamb prices although always hard to predict took a bit of a dip last week as volumes increase however, beef is approx. 2.5% above last year and lamb 0.5% below.

Feed wheat remains buoyant with increases of 20% year on year common. Futures prices have been fluctuating between £149 - £154 ex farm. Better news for cereal growers. In the north of the country difficult harvest conditions and ever increasing demands from power stations are putting severe pressure on straw prices and availability.

Enjoy the newsletter.

Ian Brown, Managing Director

Welcome Back!

Advanced Nutrition would like to welcome back former placement student, Joe Adams as our new Ruminant Specialist for Cheshire, Derbyshire and North Wales. Joe graduated from Harper Adams University with a BSc (Hons) in Agriculture in September.

Joe comes from a mixed family farm in Suffolk, which includes dairy, beef and arable. His modules at university including animal nutrition, business management and grassland management added to his diverse, practical experience. Since finishing university, this summer Joe has worked with a large progressive dairy farm in Scotland and spent a week visiting world-renowned ruminant nutritionists in America.

Joe's main focus will be on the importance of nutrition, management and health during the transition period. Using the knowledge and experience from his placement and other work, he hopes to embrace the whole farm approach Advanced Nutrition have developed to support customers in reaching their goals.

"Having spent my whole life either working on a farm or developing my knowledge in agriculture, I can relate to the issues producers face and can help support them in my new role. After some turbulent times in agriculture the main focus will be to increase efficiencies to future proof businesses whilst not impacting upon animal health and performance."

Also in this issue...

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Rearing for success!

Cow Twinning

advanced nutrition
moving farms forward

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Dry cow management towards the end of the grazing season

Minimising the risk of clinical and subclinical milk fever and consequential metabolic disorders

It's got to that time of year - count down to housing, that's if you've not already brought the cows in, writes Calum Smith. Whilst keeping dry cows out at grass eases the workload, if an effective milk fever prevention plan isn't in place, then it's a decision that can prove a very costly mistake.

Clinical milk fever incidence are currently around 10% in UK dairy herds while subclinical cases can affect up to 75% of the herd. Cows suffering from milk fever are up to nine times more likely to suffer from a miscellany of other metabolic disorders.

Why the risk? Grazed grass has many negatives in terms of both chemical and physical properties.

Chemical: fresh grass can contain an over-supply of potassium. Potassium interferes with the cow's ability to switch on her 'calcium making' mechanism; slowing it down when she needs calcium most, at the point of calving. Now some argue that supplying calcium coming up to calving can help, often it can, but results are very variable, the fact is that her requirement for calcium is much higher than any amount supplied through diet. Consequently, feeding calcium runs the risk of slowing down her own calcium making mechanism whilst also leaving her short of supply. A double hit for the cow.

Physical: autumn grass does not promote rumen fill and despite being a natural product, it can slow down rumen function.

So, what is the solution for dry cows towards the end of the grazing season?

Far off dry cows: if you still have any grazing, then intakes need to be controlled in order for cows to maintain condition score 3. Dry cow studies have shown that these cows will over consume energy, often up to and as much as 60% more than requirement.

Typical older pasture will range from 10ME to 11.5ME. An average 680kg Holstein Friesian requires 100MJ to 110MJ of energy; consequently, she can only afford to eat 11kg of dry matter whilst grazing 10ME pasture without supplements. Put the same cow onto 11.5ME grass and her limit is 9.5kg of dry matter. Keeping a high stocking density is crucial, knowing grass cover helps to calculate where you need to be to manage those intakes. Also having straw available helps to create rumen fill and keep the cow full.

Two weeks prior to calving: to achieve a successful transition, take full control and house.

To help the rumen prepare for a successful lactation offer a diet comprising high quality protein – 13% to 15% CP with a starch level no less than half the level fed to the milking cows, or 8% if milk cow diet is unknown. Introduce fibre, preferably chopped wheat straw along with some farm forage.

Grant Limond

Drumore Farm, Kirkmichael, Maybole, Ayrshire

- 230 cow British Friesian autumn/spring blocking calving herd.
- 470 acres including 130 acres grazing platform.
- 6,000 litres; 66% yield taken from grazed grass and forage.

"Clinical milk fever was hanging over the herd; incidents were running at 30% with the vast majority of incidences found amongst the autumn calvers. Worse still, we were losing cows and also having to deal with too many retained cleansings,"* Grant explains. *"Despite our best efforts to prevent last year's extra vet bill, we decided once and for all to get on top of the issue.

"We've got the grass up here, and rotational grazing is our preferred and cheapest option, however even towards the end of the grazing season, it's difficult to control. For the first two thirds of the six-week dry period we graze them on bare fields and then house for the final two weeks in order to maintain body condition score 3.

"During that final two week period, we had fed big bale silage and straw, until last year when Calum Smith advised us to introduce X-Zelit. He explained how the additive forces stimulation of the hormonal system to allow absorption of calcium from body reserves and to mobilise calcium release from the skeleton. When supply stops at calving the hormonal system is primed and ready to absorb calcium and supply the blood with the necessary calcium.

"Cows are subsequently more energetic, have higher feed intakes and are 'ready to go'. Consequently, they are less likely to fall in to energy deficit. Whilst introducing the additive was another investment decision at £15 per cow or £1,200 for the autumn calvers, it had such a massive impact. The net benefit worked out at over £47,000." See **Table 1**. "Milk fever incidents reduced by 100%, retained cleansings by 100%, vulval discharge/metritis by 100%, and we had no vet call outs."

Furthermore, the additive had an added knock effect on milk yield, up an average two litres per day throughout lactation and it introduced a significant improvement to fertility. "These cows began cycling three weeks earlier enabling us to reduce their average calving interval by 40 days and maintain a tight block calving."

There's also unquantifiable savings made on time and hassle, he says. "I'm now able to end the day without worrying about calving cows and confident I won't have to wake up in the small hours to administer calcium bottles."

Table 1: Drumore Farm improved physical & financial performance

Milk fever and related incidences					
	Pre-treatment incidences	**Current incidences**	**% Reduction**	**Incidence cost*** **(£ per cow)**	**Herd financial saving**
Clinical milk fever	20	0	100%	£209	£4,180
Retained cleansings	20	0	100%	£250	£5,000
Vulval discharge/ metritis	20	0	100%	£130	£2,600
Death/cull from the above conditions	2	0	100%	£1,400	£2,800
Total savings without treatments					**£14,580**
Performance					
	Pre-treatment	**Current**	**% Change**	**Value (£)**	**Herd Financial improvement**
Yield ave (L)	26	28	+8%	28ppl x 80cows x 305 days	£5,000
Fertility Calving index (days)	440	400	+16% (-40 days)	£6/day x 80cows	£2,600
Herd financial improvement (£)					**£32,864**
Total herd financial improvement (£)					**+ £47,444**

Source: Drumore Farm/Advanced Nutrition

* D Esslemont et al

Dried lucerne the ideal complement for first cut grass

While initial results for first cuts suggest some high quality forage, many are wet and lack structure. Diets will need careful balancing if they are going to perform to their potential.

Many farmers stand to reap the benefits of taking the first cut earlier, with diets containing higher energy, digestible grass silage. However, the analysis also shows that grass silage can be low in structural fibre, a consequence of less mature crops being cut and the slower growth rates in late spring meaning grass was less fibrous when cut. This is prevalent in the North West of the country where rainfall has been particularly high. This will have an impact on how the crop will be utilised in the rumen and presents a potential risk to rumen health.

This year it is highly likely that diets will need additional sources of quality structural fibre to balance the diet. After a wet harvest good quality straw may be in short supply, reducing the opportunity to use it as the fibre source.

Providing a cost-effective supply of digestible fibre will help ensure improved rumen function to get the most from the total diet. Rumiplus Dried Lucerne is high temperature dried and chopped to 2-4cm, ready for inclusion in mixed rations. The chop length means the product mixes effectively and helps to reduce diet sorting. Included at 2-4kg per day it will balance fibre levels, and as the product is 10 ME and 17-18% protein, it will not significantly reduce nutrient density, unlike adding straw to the diet.

The pH of dried lucerne at 6.5-7 makes it a natural rumen buffer and the structure of the fibre promotes an increase in rumination and saliva production. At 88% DM it will also help get mixed diets close to the optimum of around 45% DM.

Trials at INRA in France, show that cows fed dried lucerne have increased chewing times of 40-80 minutes per kgDM compared to the target of 30 minutes per kgDM. This significantly increases saliva production which further buffers rumen acidity.

Dried lucerne has been used in dairy diets on the continent for many years and several leading farmers in the UK have seen benefits of including it in TMR diets, through better rumen health.

With this year's grass silages it may well be an effective solution to the challenge of providing cost-effective diets.

Maintaining Margins

As the milk price rises, Rob Watkins advises farmers to build strategies to cope with any future downturns.

As we approach the latter months of 2017, there's some optimism amongst UK dairy producers with the upward trend in milk price. Those herds that have managed to improve animal health and protect fertility will be in a strong position going into winter, with each stocking place maximising margin potential.

Demand for dairy and global milk supply will influence how long we see these more favourable prices. Global trends suggest lower and shorter highs and, longer and deeper troughs for milk prices. Many herds have looked at efficiency, regulating cost, managing lameness and BCS movement and these are the herds that will now be seeing their margin/cow increasing.

If we looked at their average profiles we would see the following:

Conception Rate	+40%
Calving Index	<385
Lameness	15%
Mastitis	30%
Metritis	3%
Retained Fetal Membranes	2%
Margin/Cow/Day	£6.11
Feed Rate	0.35
Total Cost/Litre feeding	£0.11
Milk from Forage	+35%

Going forward, UK dairy producers need to become resilient. Now is the time to prepare for the next dip in milk price. We should look at what occurred three-four years ago and question whether anything should have been done differently in order to better capture potential margin now.

For some farm businesses, maximising milk from forage has helped increase milk sold, milk solids, fertility and helped them hit more of the health targets associated with operations that hit margin targets. The question we now have to ask is by chasing higher milk yield, how much milk from forage can we afford to lose without losing its benefits?

If your business doesn't fit the profile above you probably won't be seeing the margin increase yet. For farms in this position, preparing your business for the next trough is even more critical. If you were convinced to save money on feed costs, you may have lost fertility and yield essentially leaving you with a F1 car running on bio-fuel unable to accelerate alongside their peers.

Your nutritionist, consultant or farm advisor should be helping build strategies for the industry's next milk price trough. If not, you probably need to find someone who can influence your business in the next period to maximise margin and profit to mitigate the effect of the next inevitable downturn in milk price.

Please get in touch to help maximise business margins.
Rob Watkins m: 07867 384382 / e: rob@arn-ltd.com

Rearing for success!

Advanced Nutrition welcomed leading USA youngstock specialist, Dr Sandra Godden, from the University of Minnesota to look at the best way of optimising heifer rearing. Dr Godden provided pointers for feeding clean colostrum to calves.

Newborn calves rely on the passive absorption of 150g to 200g of colostral immunoglobulins (IgG) within the first few hours after birth, to provide protection against infectious disease challenge early in life.

Despite its health and nutritional benefits, colostrum is a potential early source of exposure to microbial pathogens. Salmonella, Mycobacterium, Johne's Disease, Mycoplasma, and bovine leukaemia virus are just a few of the pathogens that may be isolated from colostrum. In addition, studies have reported that high concentrations of bacteria in colostrum may be associated with decreased IgG absorption, thereby contributing to failure of passive transfer.

A first step in investigating the cleanliness of colostrum is to submit frozen samples to a laboratory. If 80% of samples come back with a "Total Plate Count" exceeding 100,000 cfu/mL, or a "Total Coliform Count" exceeding 10,000 cfu/mL, then action needs to be taken.

Colostrum use protocols

The following routine practices should be adopted:-

1. Remove the calf from the dam within 30 to 60 minutes of calving and before suckling; a calf is likely to eat pathogens from contaminated teat skin while trying to nurse.

2. Properly clean and disinfect the udder prior to milking the first colostrum - use the same udder prep procedures as you do your lactating cows.

3. If the dam has tested positive or is suspected of having a disease that can be transmitted through colostrum, then do not feed her colostrum to the calf. Feed either previously stored colostrum from healthy cows or 150g to 200g of IgG from a colostrum replacement.

4. Do not pool raw colostrum; use the 'one cow to one calf' rule. This way, if a cow is sub-clinically infected without you knowing it, you will limit the risk of exposure to only one calf instead of multiple calves.

5. Minimize colostrum contamination from dirty equipment; this requires proper cleaning and sanitising of the milking bucket, storage buckets or bottles, feeding bottles, and teats and/or oesophageal tube attachments. Cleaning and sanitising should follow the same basic steps as for your parlour including:

- **warm water rinse**
- **hot water wash with detergent or bleach while scrubbing well with a brush**
- **hot water rinse with acid**
- **inverting the equipment to drain and dry**

Many producers avoid contaminated storage equipment by using disposable storage bags whereby fresh colostrum is dispensed into single-use disposable bags.

6. If you store colostrum, refrigerate or freeze it as quickly as possible to prevent bacterial proliferation. If refrigerating, aim to feed it within two days of collection.

Bryn Davies looks at the best way to manage cows carrying twins

Cows are not really designed by nature to routinely carry, deliver or raise two calves simultaneously. Twinning prevalence twenty years ago was less than 1% but now it's not uncommon to find dairies with rates of 7-10%. High milk production is the most likely cause of double ovulation although stress, weather and nutrition are often blamed.

Managing the cow carrying twins

To manage cows with twins effectively early detection is imperative. Once a twin pregnancy is diagnosed they should be considered a high risk for future problems. Re-check after initial pregnancy diagnosis to ensure she has not had an unobserved abortion or re-absorption.

Put a brightly coloured zip tie through the existing ear tags to provide instant identification, this is invaluable for consistent monitoring. Keep a check on the cow's body condition score (BCS). Ensure twin-bearing cows are BCS of 2.5-3 towards the end of lactation by leaving them in a high yielding group if possible.

Don't be afraid to dry these cows off early. On average, cows carrying twins will calve up to ten days before their due date. Eight weeks prior to calving ensure the cow can receive extra energy if they go into the far-off group or, consider moving them straight into the close-up group. If feeding DC X-Zel to your close-up cows, the high energy density of DC X-Zel will benefit cows carry twins and reduce the risk of metabolic conditions. Make sure the dry cows are not overcrowded.

Managing the fresh cow after twins

If possible, have a fresh calved group. By keeping the twin cow identification zip tie through her ear tag, this facilitates close monitoring and perhaps a longer stay in this group.

Allow access to small amounts of palatable and digestible long fibre to encourage rumen function and increase DMI. Increase parlour concentrate wherever possible during the first twenty days.

To satisfy the nutritional requirements of high producing dairy cows, and twinned cows in particular, feed Transition Energy, a high energy liquid blend for close-up dry cows and fresh calvers. This can help eliminate problems such as fatty liver and ketosis associated with negative energy balance.

To help maximise DMI, consider including Glycal Forte in the fresh group diet. DMI is the biggest influence on BCS. Glycerol in Glycal Forte is protected, it therefore bypasses the rumen and is released in the abomasum where it is absorbed and transported directly to the liver to be converted into glucose. This means that the cow does not have to break down so much of her body fat to fuel her milk output; and results in less weight loss, leaving her in better condition.

If you'd like to talk to Bryn about cow twinning you can contact him on: m: 07930 336172 / e: bryn@arn-ltd.com

Advanced Nutrition trial new calf rearing system to reduce antibiotic usage in youngstock

Caitlin Palmer reports on the system's benefits...

Antibiotic usage and resistance are hot topics at the moment. With pressures from consumers and retailers, milk purchasers are bringing in requirements for their producers to start reducing antibiotic usage in their herds. In other European countries, routine preventative antibiotic use has been banned, so how long will it be before the UK follows suit?

Advanced Nutrition have developed a new calf rearing system, which involves a uniquely formulated calf milk replacer and calf creep alongside our tried and tested calf rearing protocol. The aim is to reduce antibiotic usage in the calf rearing stage through better health, which will in turn result in matched or better growth rates. We are about to trial this new system on six farms throughout the UK, and follow the growth rates, intakes, health and antibiotic use right through to 12 weeks of age.

The main issues in calf rearing are: nutritional scours; microbial scours caused by E-coli, Salmonella, Rotavirus, Cryptosporidium and Coccidia to name a few infectious pathogens. These can occur as mixed infections as well as single infections; and pneumonia which again can be caused by both viruses and bacteria and has a lasting long-term effect on the productivity of the heifer.

The calf milk replacer is a very high quality skim-based product. It forms a casein clot in the abomasum allowing slow breakdown and supply of nutrients which eliminates the cause of nutritional scours, and increases digestibility and nutritional value of the powder. It has three natural additives in it, which all have proven beneficial effects including reduced pathogen load and reduced veterinary treatment usage when used by themselves, but when used together are expected to have a synergistic effect. Overall immune function will be improved, as well as reduction in bacteria and parasites in the gut and improved respiratory function through multiple actions. Early results from a single pilot study looked very encouraging indeed.

The calf creep is made with high quality raw materials used to ensure maximum skeletal growth and development. This has two different natural additives included in the spec, which have been used by Advanced Nutrition before with excellent results, but never used together until now. Again, they improve gut health and integrity as well as having actions to reduce pathogenic load. Improvement in gut environment means increased starter intakes and absorption and therefore increased growth with a better overall immune system.

Advanced Nutrition have seen an opportunity to help equip farmers with our knowledge, tools and products to assist in reducing antibiotic usage on farms, particularly the calf rearing stage. Once this trial has been completed we will release this information to you all and let you know the results.

For more information please contact Advanced Nutrition on: t: 01524 263 139 / e: office@arn-ltd.com