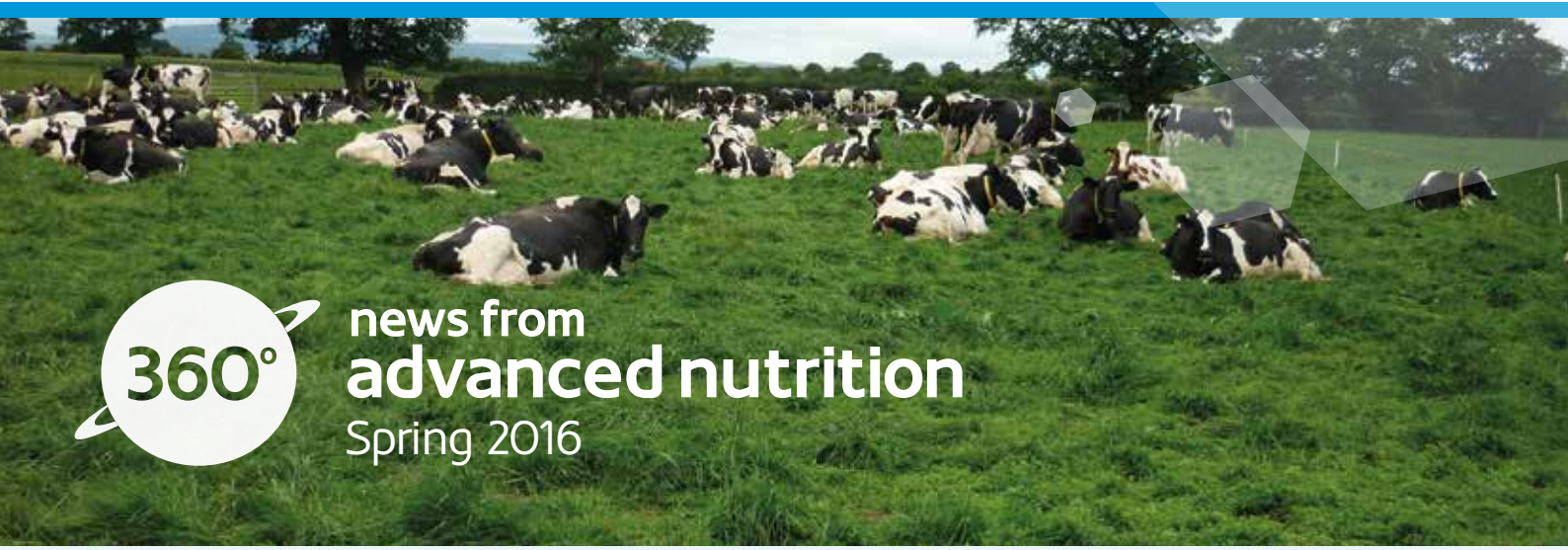


360°

news from
advanced nutrition
Spring 2016

Spring has Sprung!

As our countryside awakens once again, we see the environment spring back to life. With the days becoming longer, it's time to take stock of how our farms have performed and how we'll prepare our businesses for the coming year. We must continue to look ahead to brighter days even with the day-to-day challenges.

This newsletter focuses on strategies to help you look critically at productivity and efficiency. Pivotal to the survival and success of many dairy farms going forward, is the role that grazing and home-grown forage production will play. We've set out some practical tips to maximise output from grazed cows and, ways of making the most out of forage to help make significant feed cost savings. However, we mustn't forget the value some inputs can have. We must look at return on investment rather than just price as our articles highlight.

Despite a hard winter, crops are beginning to grow regardless of the bitter cold winds. Here at Advanced Nutrition we are continually working to get farm businesses into a position so that they are robust when times are challenging but will then be able to take full advantage when the market rebound. **Please contact us to see what we can do for you.**

In this issue...

Making the most from Spring grazing

With the arrival of Spring and the onset of the grazing season, we face a new set of challenges. This is on top of the desperate situation the majority of dairy producers are in over milk income. It may push many producers to graze cows for longer, or, even for the first time.

What we must ask ourselves is how are we going to maximise the output from grazed grass using the **high yielding Holstein cow?**

These are some practical tips to help decision making in the next few weeks:

BEFORE TURNOUT

- Complete a forage budget for the year and, decide on the area to conserve.
- Walk the grazing fields a month before turnout to take average covers.
- Ensure slurry and nitrogen are applied 8 weeks before turnout.
- Check all fences, including electric fences.
- Clean water troughs and check for any leaks.
- Make sure tracks are clear of any sharp objects or stones.
- Organise facilities so that cows are not waiting to go back to grazing after milking.
- Teach staff how to move cows quietly so that they are not stressed.

Rob Watkins
Advanced Nutrition

Continued overleaf

Making the most from Spring grazing
(continued)

SELECTING ANIMALS TO TURNOUT

- Start initially with pregnant cows over 150 days in milk giving less than 28 litres. Weather and grass growth can change this selection.
- High yielding fresh cows may be turned out but, ideally for short periods after the TMR has been fed to them in the morning.
- Do not put out any sick cows, especially lame and cows with mastitis.
- Tail paint cows to identify cows that lose pregnancy.

SET TARGETS

- Set grazing targets kg/DM for grazing cover. Target 2,700 to 2,900kg DM/Ha and residual covers after grazing should be 1,500 to 1,600kg DM/Ha. Any covers that get higher than this, include it in first cut. Complete first cut early to make it available for the second round.
- Work out the approximate days it will take to get round first grazing. Pick heaviest covers to graze first.
- Don't expect cows to eat 14kg DM/day in the first 2 weeks. Allocate 4kg DM/day in days 1 to 3, 8kg DM/day in days 4 to 8 and so on. Balance the ratio accordingly.
- Work out available DM, for example, 100 cows with a target of 10kg DM/day which gives a total of 1,000kg DM/day. If the cover is 2,700 and the residual left is 1,600kg then 0.91ha is required per day.
- Live by the targets you set but be flexible to change as growth changes.

Getting the most from Spring grass

Good planning and accurate execution will help prevent management mistakes being made at turnout, however, there is still one hidden nutritional danger.

Spring grass has high levels of rumen available protein that the cow cannot use efficiently. This results in high levels of rumen ammonia which is transported in the blood as urea. High urea levels raise uterine pH, which can have a potentially toxic effect on spermatozoa and oocytes and, can cause hormonal imbalances by depressing progesterone in the early breeding period.

Advanced Nutrition has designed a new dairy concentrate called **GrazeMore+N** to counteract this effect. We have included Novatan, a natural blend of specific essential oils and trace elements within the dairy compound. Novatan simultaneously increases the microbial protein yield from the rumen whist also increasing the quality of by-pass protein. As part of this process, ammonia is reduced by up to 40%. A very high proportion of the extra "by-pass protein" is totally digestible as it has not undergone any inhibitory treatments to prevent its breakdown in the rumen.

GrazeMore+N

The performance of dairy cows is significantly improved with GrazeMore+N.

- Increased milk production by 1.5 litres/cow/day
- Increased milk protein levels
- Reduction of urea in the milk
- Reduced incidence of metabolic disorders
- Very cost effective solution to increase by-pass protein in dairy feeds and diets

Think value not price

With the current commercial pressures on the UK dairy industry, UFAC-UK Sales Manager Mike Chown suggests farmers need to change the way they assess how they select feed inputs based on cow requirements, science and value.

I have spoken to a great many dairy farmers in the last three months and without exception the discussion turns to reducing feed costs and producing milk more cost effectively.

My response is to say, try to ensure you have quality forages, then not to think price, but to think value. Rather than saying 'I can save x pence if I cut something out', ask yourself 'what return will I get if I spend x pence, or how much do I risk losing if I cut something out and will the saving exceed the potential loss?'

When milk prices are low and margins tight, the emphasis has to be on feeding cows as well as we can so they can perform to their optimum, not cutting corners and hoping they will perform OK.

To achieve the best return, we need to think about what you are asking your cows to do, making sure you manage and feed them accordingly.

You want them to milk in a way that maximises the price achieved from your contract, a combination of good milk quality and hitting the profile. You also need to increase the prospects of keeping them on profile in the future, which means getting them back in calf. If going out to grass you want them to graze efficiently, maximising grazing hours and dry matter intakes, which is dependent on good foot health.

Achieving this level of performance will come from feeding the right feeds for your situation and working on return on investment, not price.

Top priority is optimal dry matter intake (DMI), and to achieve this we need is to ensure rumen function is maximised, i.e.

- Adequate effective fibre supplied to control rumen pH to maximise fibre fermentation and volatile fatty acid (VFA) production
- Rumen microbial protein requirements are met
- Effective fermentable energy is not limiting

Once rumen function is maximised do not forget by-pass protein & energy. See limiting nutrient by yield in the **Table 1** below:

TABLE 1

Milk Yield	Nutrient Limiting Milk Production			
kg/c/y	1st	2nd	3rd	4th
7,000	Energy			
7,500	Energy	By-pass energy		
8,000	By-pass energy	Energy	By-pass protein	
9,000	By-pass energy	By-pass protein	Energy	
10,000	By-pass protein	By-pass energy	Energy	VFA production
>=11,000	By-pass protein	By-pass energy	VFA production	Energy

Continued overleaf

Think value not price (continued)

We must remember that to maximise DMI we have to pay significant attention to transition cow management and nutrition, in particular fibre, rumen protein and by-pass protein. Poor protein metabolism increases muscle loss, along with lower insulin secretion, which means poor adaption to future energy demands i.e.

- Lower glucose levels mean demands on fat and muscle tissue
- Increased fat mobilisation which:
  - Lowers ovarian activity/increases egg death
  - Impairs insulin secretion
  - A decrease in plasma insulin levels contributes to metabolic stress and impaired immune system

Next we must look at factors to take into account in the first 100 days in milk:

- Rapid increase in milk production puts the cow into a negative energy balance (NEB)
- Increase in ME for maintenance
- Ensure glucose supply is met, without adversely effecting the rumen
  - Body condition loss may be used as a glucose source
  - Muscle tissue (protein) loss used as a glucose source
  - Muscle mass influences follicle and egg sizes
- NEB and imbalanced nutrient supply increases stress to the immune system (increased risk of metritis, mastitis & SCC)
- Cows need balanced total diet fatty acid profile (FAP)

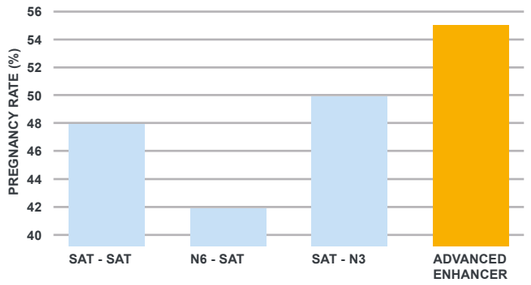
Therefore, we need to look at the total balanced diet.

New research helps to confirm correct total diet ration formulation and economic value; fats are a good example. If you feed on the cheap, you won't feed fats. If you feed for a return then the right fats have an essential place in diets, especially as cows go to grass when maintaining milk quality, fertility and mobility can be a challenge.

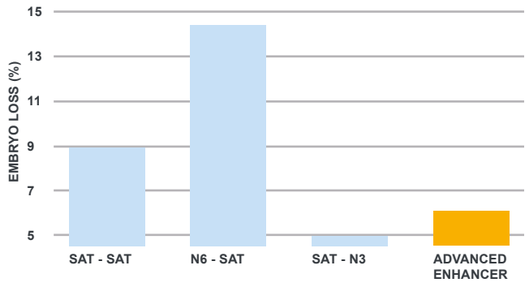
Research from Silvestre 2011 & Santos 2013 demonstrated the major impact of specific fatty acids, in particular Ω-3 fatty acids (EPA & DHA) as seen in **Advanced Enhancer** on dairy cattle performance and fertility.

Looking to the tables below and overleaf, note the pregnancy rate, embryo loss and yield responses, with no adverse effect on butterfat.

HIGHER CONCEPTION RATES

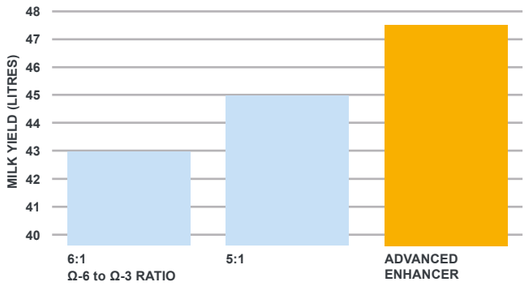


LESS EMBRYO'S LOST



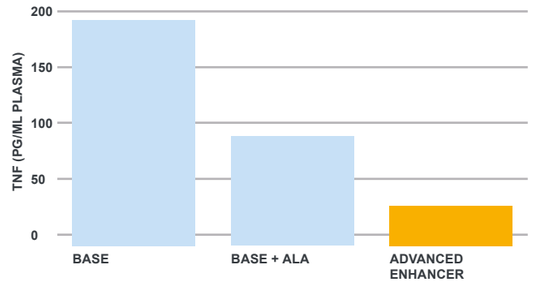
Santos also looked at increasing the Ω-3 fatty acid ratio, as demonstrated by **Advanced Enhancer**, milk yield was increased.

INCREASED MILK YIELD



Also there is a positive immune response to feeding Ω-3 from fish oil as seen in **Advanced Enhancer**.

TNF: Responsible for Inflammatory Response



It is also known that other fatty acids have a major impact on oocyte and embryo quality.

- C16:0 alone exerts negative effect on oocyte quality, hence lower implantation and higher death rates with these fats

To increase overall fatty acid absorption and maximise food conversion efficiency, we must ensure there is post rumen glycerol so the free fatty acids are formed into triglycerides.

So as in **Table 1** we must not forget by-pass protein and energy, including fats, as they all are vital in optimising post rumen metabolic efficiency. In turn minimises negative energy balance and thus tissue loss, reduces stress and immune suppression. These dietary changes will improve herd mobility and increase milk yield along with improving follicle/egg size and fertility. Improved efficiency means cows stay longer in the herd thus increasing overall production, health and margins.

Please contact Advanced Nutrition to see if your herd would benefit from introducing or altering the fat content of their diet

What is Advanced Enhancer?

A blend of oils and fatty acids designed to support both fertility and immunity. It is specifically designed for transition and early lactation cows.

What does Advanced Enhancer do:

- Maximise energy supply - reduced time in negative energy balance
- Reproduction system support
- Immune system support
- Rumen function maximised
- Liver support
- Rumen buffer action

Benefits of Advanced Enhancer:

- Increased dry matter intake
- Cows reach positive energy status quicker
- Improved fertility
- Reduced risk of SARA and acidosis
- Maximise milk production
- Reduced culling rates, due to increased herd health

Advanced Enhancer is compatible with most feeding systems including TMR.

Maximising the return from what you have in the field

Mark Gorst, Ruminant Nutritionist

Silage time will soon be upon us again. Do you sample your grass before cutting or just take it as read that it will be the same as it was last year? I have found that sampling grass a week ahead of scheduled cutting will pay dividends.

We can determine if the grass is on target for harvest by sampling a selection of fields to be cut. I have found that this can make significant feed cost savings. I have undertaken trials in conjunction with DLF Seeds & Science over the last 2 years, which have revealed a staggering variation in silage energy content year on year.

The trial was undertaken on a dairy unit and looked at the opportunities of using a grass mixture containing DLF's Advanced grasses, which are ideally suited to intensive silage production. The mix included varieties bred to provide excellent forage quality combined with good persistence, stress tolerance, disease resistance and included some grass varieties designed to provide enhanced fibre digestibility (DNDF).

First and second cuts were manually weighed, by cutting a 0.5m^2 area to calculate yield, and analysed for DM, ME, NDF and nitrogen content to ensure the sward was ready for cutting in 2014. The same sampling process was repeated on exactly the same day 12 months later, the only difference being the weather. The results show a difference of 3,540MJ less clamped in 2014. See **Table 1**.

Table 1: Output comparisons for 2014 and 2015 swards

	2014		2015	
	1st Cut	2nd Cut	1st Cut	2nd Cut
Fresh wt (tonnes/acre)	14.57	8.10	12.95	6.48
DM %	14.8	16.7	18.5	16.4
Total kg/DM	2,160	1,350	2,396	1,063
ME MJ/kg DM	10.4	10.5	11.8	11.2
NDF	49.9	53.7	38.2	44.2
Total energy (MJ/acre)	22,464	14,175	28,273	11,906
Total energy produced in two cuts (MJ/acre)	**36,639MJ**		**40,179MJ**	

Source: DLF

If you consider grass silage is costed at 0.93p per MJ/ME DM (Nix 2016), then the cost of replacing 3,540MJ in the diet with brewers grains at 1.96p per MJ/ME DM (Nix 2016) would be £36.46. For a 1,000t clamp at 28% DM then those losses would amount to a ***significant £2,953.***

Cutting is Crucial

To maximise your forage potential, cutting at the right time is therefore crucial. Whilst it may appear that there is less quantity than letting the crop 'bulk up', the improved quality will pay. Savings made by cutting at the correct time will assist in paying for the extra cut required to make up the quantity.

The trial outcome led to the question, is there sufficient appreciation of grass quality leading up to ensiling? It's a case of farmers responding by being aware of the season and taking action by sampling. If the sample analysis indicates that the grass is at the required energy and nitrate levels, then don't wait to cut. D value falls by 0.5 unit (0.08 MJ) a day from when the grass starts to head.

Fine tuning and pursuing quality forage rather than sacrificing it for yield should be the way forward. Admittedly, there are limiting factors to cutting at the right time not least the weather and contractor availability. However, poor forage with low DM and low energy yield will need substituting with bought in feed, which will in almost every case cost more per unit of energy than from forage.

As a guide I would suggest following the **3M rule** below

The 3 M rule

MONITOR
- Calculate an approximate cutting date from the fertiliser, organic and inorganic that has been applied
- Take into account the heading dates of the mixtures that have been sown
- Take into account the weather conditions

MEASURE
- Sample across the fields to be cut approximately five days ahead of scheduled cutting date
- Remember younger swards will react differently to the more mature sward.
- If the results show the grass is ready for cutting

MOW
- Take the opportunity to cut, but only if the grass is ready, in order to optimise its potential

As we have now the grass cut at an ideal time we can also reduce further deterioration by using an additive to help preservation. If you don't use one already it may be worth considering one? Yes, I agree it is an extra cost but if the payback is 4 to 1 is it not worth a little more investigation?

One of the additives we favour is Sil-All^{4x4}+. In our last Newsletter our Harper Adams University placement student, Joe Adams, looked at treated & untreated forages and explained that on a 1000t clamp, by treating with Sil-All^{4x4}+ there is a possibility of retaining an extra 12t of DM in the clamp.

If we calculate the energy saving, 0.13mj/kg/DM, you would expect by treating the grass, coupled with the energy from the extra dry matter yield, could result in an extra 32,993 litres. **With milk price now around 20p per litre and after the cost of the additive the extra income would still be £5,200.** This figure doesn't take into account the benefits of extra quality protein and improved digestibility.

Maximising the return from what you grow on farm is essential in the current climate. Alternative feeds tend to have a cost that is above that of forage.

If you would like to discuss how we can improve your efficiency from forage please do not hesitate to get in touch.

X-Zelit – It's a piece of cake!

We've been talking with Darren and Stuart McMurran in Northern Ireland about how easy it's been to introduce X-Zelit to their herd and how it's helped reduce clinical and subclinical milk fever dramatically.

Darren and Stuart McMurran who farm at Castlevennon Road, have fed X-Zelit to their Holstein herd for over three years. It's really proved its worth. Before using X-Zelit 15% of the herd suffered from milk fever. Since using it, there were no cases in the first year and only 2 cases over a three-year period.

They've recently expanded the herd from 300 to 400 milking cows, averaging 11,800 litres per year. As cow health has improved since introducing X-Zelit, milk yields have also increased.

	Before X-Zelit	After X-Zelit
Darren and Stuart McMurran **Castlevennon Road, Banbridge**	15% of herd suffered from milk fever	0 cases of milk fever first year

Average cost of milk fever £209 per incidence.

Clinical and subclinical milk fever are costing farmers thousands each year, but this can be prevented. In controlled trials X-Zelit is 100% effective and under practical farming conditions achieves an efficacy of about 90%. Farmers using X-Zelit, are only too eager to tell us the benefits, with healthy cows and financial savings being at the top of the list.

Darren explains, "Prior to using X-Zelit we tried lots of different strategies such as DCAB diets, increasing salts, lowering potassium, using calcium boluses and giving calcium drinks straight after calving. Nothing was making a difference."

*"In the first year of using **X-Zelit** it was difficult to attribute the direct affect on milk production but we increased by over 1000 litres per lactation. We also had no milk fevers or metritis in that first year and only 2 cases since using the product. Compare that with the 45 cases per year we were having, **the results speak for themselves.**"*

Before feeding X-Zelit, Darren and Stuart would have to temperature check the cows every day and the majority would have high temperatures suggesting metritis was a real issue. "We had a few blips to start with and a couple of cows with temperatures but now we're so confident in the product that we don't temperature check them anymore."

"Dry cow management is very easy for us. We feed X-Zelit 3 weeks before calving as this suits our management groups. Six hours after calving they go straight into the fresh cow pen with the others. Previously we were scared of cows going down, we kept them in their own straw pen and they didn't go back into the herd until 3 days later."

To suit different farming systems, whether intensive, semi-intensive or grazing, X-Zelit is available in three forms from Advanced Nutrition. Darren and Stuart opted to use X-Zelit in its pure granular form. This can either be mixed into the TMR or used to top dress concentrate. X-Zelit is also available as DC X-Zel, which is either a mineralised or non-mineralised wheat and soya based feed. The Advanced Nutrition team will be able to discuss which form would be best suited to your set-up.

You can find out more on our website www.arn-ltd.co.uk/product/x-zelit
You'll also find links to other farmer testimonials, where they are saving up to £90 per cow per year.

advanced nutrition
moving farms forward

t:01524 263 139 **e:**office@arn-ltd.com
@ arn_home /ARN360
www.arn-ltd.com