NWF AGRICULTURE

Dairy Bulletin

Edition 4

Includes Youngstock section

Inside this issue

Grass Silage Analyses

What can we expect this winter

By Adam Clay, Head of Technical

Before we reached the end of June many farms already had 2nd cut in the clamp where quantity and quality gave us every reason to be optimistic about winter stocks. In this industry we continue to learn how quickly things can change, the heat waves preceded the droughts and whilst some areas in the North have remained green, others have dried up and grass growth rates plummeted.

Grass growth data kindly supplied by AgriNet

Grass growth rates supplied by Trouw Nutrition through AgriNet show a significant drop in growth rates when the heat began, and recovery is yet to happen, leaving many farmers concerned over winter silage stocks.

There is however a silver lining as qualities are strong and should give farmers the opportunity to reduce feed costs providing that the quantity is there. As seen in the table overleaf, grass silage averages, analysed by NWF Agriculture's in house FAA approved laboratory, show some strong positives but also some areas for concern.

Averages	Units	1st Cuts	2nd Cuts	3rd Cuts
Dry Matter	%	31.66	37.40	35.64
Protein	%DM	14.37	14.07	16.66
D Value	%	70.05	67.83	65.77
ME	MJ/kg DM	11.21	10.85	10.52
NDF	% DM	49.88	48.61	47.58
ADF	% DM	31.07	31.04	30.43
Lignin	g/kg DM	35.14	35.91	37.45
Ash	% DM	8.75	9.02	10.07
Oil	% DM	4.11	3.47	3.68
pH		3.99	4.16	4.21
Sugar	% DM	1.70	2.61	1.35
VFA	g/kg DM	13.16	17.10	14.20
Lactic Acid	g/kg DM	69.74	56.23	63.53
TFC	g/kg DM	445.19	442.74	406.97
TFP	g/kg DM	105.88	97.84	115.75
RFC	g/kg DM	174.76	180.72	163.66
RFP	g/kg DM	85.74	79.14	95.43
Acid Load		44.27	43.95	43.67
Glucogenic Energy	g/kg DM	123.78	119.28	120.50
DYNE	MJ/kg DM	6.09	5.91	5.79
NDIP	g/kg DM	61.16	62.56	64.10
NFEPB	g/kg DM	11.25	4.56	27.47

Grass Silage Analyses - What can we expect this winter *(Continued)*

Dry matters are very good, a dryer silage (32 – 35%DM) reduces the risk of clostridial fermentation which will help nutrient retention and palatability, and can help with rumen health. The risk with silages over 35% DM is heating in the clamp. 2nd and 3rd cuts both average over 35% DM so keeping a tight clamp face and ensuring oxygen is excluded from the clamp is essential. Typically pH should be 3.8 – 4.1, this can lift a little on dryer silages but if silage is higher than 35% DM and 4.5pH stability could be a concern. If heating and mould does occur, consider using a mycotoxin binder and Selko TMR to help prevent the mix from warming throughout the day.

Whilst last year's levels were very low, crude protein is typically 1 – 2% higher this year, with all cuts averaging over 14%. This is a welcome relief and can help reduce the purchase of rumen degradable protein and focus more on supplementation on the use of by-pass protein i.e. use homegrown forage for rumen protein and purchased feeds for by-pass protein.

Energy levels are typically 0.1ME higher than last year, which should deliver a 0.23 litre/head/day lift in milk yield. Since silage is dryer and has a lower acid load (likely due to a lower lactic acid), rumen health characteristics are good which should help cows utilise the higher digestibility. Watch out for high ME silages that have high lactic acid, it looks good on paper but when lactic acid gets over 90 g/kg this can drop rumen pH. To support rumen health, make sure a suitable buffer is on offer, such as NWF's Stable Rumen Pak.

Overall forage qualities are looking good, although there is still a big range between cuts and regions across the country. One of the biggest challenges this winter will be the movement from one cut to another, due to the level of variation. This highlights the importance of regular sampling and testing of silage to ensure dietary changes are made accurately and timely to support animal health and performance.

If you require help in interpreting and balancing a silage analysis, please speak to your local NWF Sales Specialist.

Winter forage stock considerations

By Abbi England, NWF Technical Manager

Homegrown forage is a valuable asset in these times of rising input costs. However, after a good start to the season the prolonged hot dry conditions have left many suffering from low grass forage stocks for winter. Maize crops for a lot of the country are looking to be a lower yielding crop than previous years, though arguably the crop has hope of being particularly high starch. There should still be time for extra grass cuts, but it is unlikely they will provide the tonnage needed for most.

Here are some forage extending tips

- Analyse your silage regularly, accurate silage analysis will play a vital role in allowing stocks to be optimised over the winter
- Replace a smaller percentage of forage throughout the winter to avoid needing to replace large percentages of forage intake next spring
- Consider moving youngstock onto straw and compound rations if they are usually fed silage though the winter
- Contact your local sales specialist who can calculate the tonnes of forage in your clamps specific to the dry matter of the crop.

For the milking herd there are a number of options to extend forage stocks with alternative feeds. Moist feed would be a popular choice but even they are becoming difficult for new users to source. Table 1 highlights the options to help extend forage stocks shown as 1kg DM (Dry Matter) comparisons. Table 2 highlights two alternative feeds to consider.

Other considerations

- It is important if straw is included that it is chopped well (1- 2 inches) and the rest of the ration must be balanced carefully to ensure total intakes and performance are not negatively affected.
- When feeding any of these alternative options take time to gradually change the diet. It takes the rumen up to 2 weeks to adjust to diet changes.
- Ensure cattle have access to clean, fresh water at all times.
- Consider mineral application.

Table 1

	Grass Silage	Straw + Molasses	Straw + Urea + Fat	Straw + Rape + Barley	Hay + Rape + Barley
Grass Silage kg	3				
Straw kg		0.85	1.0	0.7	0.9
Molasses Regupro 38 kg		0.5			
Rape kg				0.3	0.15
Rolled Barley kg				0.2	0.2
Evolution Fat kg			0.125		
Urea g			35		
Total fresh weight kg	3	1.35	1.16	1.2	1.25
Dry Matter fed kg	1.05	1.04	1.02	1.04	1.08
Sugars %DM	3	9.8	1.3	3.74	9.4
Protein % DM	14	13.85	13.4	14.2	14.3
MJ Kg DM	10.5	8.6	9.9	9.3	9.9

**Only 1 example is shown for hay but all options are complementary, as hay has a high protein, ME and sugars less supplementary feed is needed.*

Table 2

	NWF's Winter forage extender blend	NWF's 16% HDF Empire/Lakeland HDF
Blend kg	1.25	
Compound kg		1.25
Dry Matter fed kg	1.08	1.08
Sugars %DM	7.7	9.5
Protein %	14.2	16
Protein % DM	16.5	18.6
MJ Kg DM	12.1	12.5

Ensure you assess winter feeding options early to optimise stock and animal performance, contact your NWF local sales specialist to discuss winter feeding options.

Robot Feeding Technology

The Lely Vector is a robot technology capable of automatically mixing and feeding a self-mixed ration, but what are the benefits of having this technology on farm?

Benefits of Vector

- **Flexibility**
- **Collective and accurate data**
- **Animal performance**
- **Reduced feed waste**
- **Reliability**

Flexibility

The Lely Vector system allows for great flexibility in both labour and herd management. Andrew Griffiths runs a 400-cow commercial Holstein unit in Cheshire, the whole business evolves around automation, running six A5 milking robots, Lely calm calf feeders and a Vector robotic feeding system. "*Investing in automation has given us both labour and kit savings, when milking in the parlour we had a good team of six plus part-timers, nowadays myself, herd manager, Dave Hastings and two-part time staff manage the entire operation. The vector replaced a tractor-drawn tub feeder. Reduced time and diesel have cut fixed costs over threefold. It means the system paid for itself quite easily within the first four years after installation in 2015. Equally important, automation has enabled me to spend more time with our young children now aged 11 and 7 years.*"

Collective and accurate data

Accurate historic and live data is always provided by the Lely Vector system. NWF Agriculture Technical Manager Abbi England has been working with the business for a number of years "*the level of automation gives us so much feedback on how each group of cows is responding to the formulated ration. It makes diet adjustments to silage changes very easy, and accurate daily feed costings reports help the business make management decisions on feed input*".

Animal performance

A big benefit of the Lely Vector is the ability to individually feed each group of animals on the farm. "*We run up to 8 different rations through the vector each day, that wouldn't have been possible with the tub mixer,*" says Andrew. Abbi believes the extra detail in specific group rationing is a key contributing factor to the business's success. "*Particularly the heifers. In the winter we have 5 different heifer rations, the benefits of individual age group feeding really do show when they enter into the milking herd*" says Abbi.

The system is not only continually mixing and feeding out small amounts of fresh feed, but also providing every animal with the same opportunity. "*The milking cows are fed between 14 to 21 times a day, little and often, always ensuring the same accurately mixed ration is available 24 hours a day,*" says Andrew. Abbi is a cow signals master trainer and explains "*The cow signals concept tries to encourage farmers to do 6+ pushups a day, but this system really overachieves that, as a result, intakes are excellent and you won't find a calmer herd of cows*".

Apart from cost savings and solving potential labour issues, since introducing the technology the unit has been able to improve overall herd performance. "*We have become better herd managers; Dave checks the Lely software each morning so any issues are immediately flagged up. We rarely have a ketosis case, annual mastitis incidence has been reduced by over 15%, selective dry cow therapy has replaced blanket treatment and fertility has significantly improved*" explains Andrew.

It is not uncommon to see a 5% to 15% increase in pregnancy rates with the vector. The stabilisation of rumen pH that smaller, more frequent meals deliver results in better utilisation of energy and increased pregnancy rates. "*On the old parlour and tub mixer system the herd would float between 30-35% pregnancy rate but now they are consistently over 40% with a 369 calving interval,*" says Andrew.

Reduced feed waste

The Lely Vector with the aid of a proprietary laser, measures feed height at the barrier and delivers more of the ration as and when required. This method results in several benefits including; reduction of feed waste, impeccable accuracy and consistency, increased overall operating cost efficiencies and, most importantly, improved rumen health.

Reducing feed wastage has a significant effect on the return on investment (ROI) drivers for automated feeding. It is not uncommon for feed wastage to go from the typical 3% to 5% in a traditional TMR-fed herd to 1% or less with an automated feeding system. "*We clean out the troughs every two weeks and end up with just a barrowful; previously we spent 30 minutes every day and cleaned out up to 100kg of waste,*" says Andrew.

Reliability

Reliability is always a key component in any feeding system, Lely can give 24-hour support to your farm 7 days a week.

For more information visit the Lely website to find your local branch. www.lely.com/gb

Winter rationing tips

By Erin Wray, NWF Technical Co-Ordinator

At the time of writing this piece, maize crops still look drought-stressed with most of the central and south west regions being dry and brown resulting in silage stocks relying on a healthy 3rd cut once the rain arrives so growth can catch up. With winter forage stocks remaining questionable, we do know that feed prices remain inflated, but milk price is catching up and farms will be driving for performance to maximise milk sales.

Focus on the peak

This topic is a tale of two halves, early lactation cows are on an incline in both milk yield and dry matter intake. They typically reach a peak milk yield 50 – 70 days post-calving (days in milk) but can occur sooner. Every 1 litre increase in peak milk yield can equate to a 200 litre increase in lactation performance, because the drop in a lactation curve is controlled hormonally at a consistent 8-10% drop per month (heifers will typically drop more rapidly and peak at 70 – 80% of adult cow peaks), means that a persistent/flat lactation curve is rarely achieved. Therefore, achieving a higher peak milk yield can increase overall lactation yield, and feeding higher rates of supplements during this period will see greater yield responses and therefore return on costs.

This doesn't happen without some risk, the second half of the equation is negative energy balance. Achieving a higher peak milk yield is positive for milk production, however, it does increase the risk of excessive weight loss which can reduce fertility performance. To mitigate the risk of this occurring it is important to get the basics right.

Focus on the basics

Intake is king, having high dry matter intake (DMI) gives options in the herd's diet and shows cows have a healthy rumen. Where a herd average intake maybe 19 – 20kg DMI (3% BW) a peak yielding cows intake could be over 26kg DMI (4% BW+). Ensuring adequate feed and shed space is essential but regular feed pushing up will also encourage intakes, at least 6x per day. Push feed up 45 mins – 1 hour after feedout as well, this will ensure that submissive cows have adequate feed availability as they will often wait until the dominant cow have eaten and left the feed fence.

Monitor total dry matter intakes to ensure the diet formulated is relevant to the real diet fed,1kg of dry matter lower than expected can reduce yield by over 2 litres of milk. If intakes are lower than expected assess rumen health, a buffer may be required, yeast supplements can also help fibre digestibility and therefore intake. If cows appear full but intakes are not supporting peak yield, physical rumen space may be limited, therefore chopping the silage shorter (approx. 20mm) will help overall intakes.

Focus on balancing rations

Early lactation rationing should focus on achieving the following key components:

Dry matter intake – as previously discussed, rumen health and fibre levels are important factors when it comes to rumen health.

Fertility – laying down the platform for a healthy return to service will help overall farm performance. An optimal balance of protein (not too high, not too low!) and high glucogenic energy from starch and sugar sources will help a return to positive energy levels and therefore bulling activity.

Milk yield – peak milk yields are largely management and health-focused. Intakes are of course key but also focus closely on protein balance. High rumen available protein will quickly drive cows into milk post calving but could increase weight loss and ultimately reduce lactation yield. Feeding higher levels of by-pass protein such as Ultra Pro R and Ultra Soy can help cows achieve peak milk yield without the risk of weight loss.

Are you aware that mineral requirements have changed?

Following an update to the mineral requirements of dairy cows, now is the ideal time to review mineral levels in your ration. Working towards the new recommendations means a potentially significant saving on feed costs and environmental impact, alongside improved animal performance.

Generally, the UK greatly oversupplies micro minerals to dairy cows with the thought process 'more is better', particularly when it comes to copper, zinc and manganese. However, this is not the case and the best way to supplement minerals is to provide just the right amount to avoid issues with underperformance which can come from both over and under-supply.

Rather than believing a large quantity means quality, the new requirements based on the latest research shows us that we should be concisely meeting requirements using a consistent, good-quality source of minerals. This means smaller numbers on a label and a move away from traditional sources such as oxide and sulphates towards superior sources giving us quality over excessive quantities.

NWF Agriculture has responded to this latest research by altering the source of minerals in their premixes to now include Intellibond copper, zinc and manganese. Intellibond minerals, due to their unique structure, offer greater stability in a ration, and are more available to the animal for absorption and use, meaning you get more for less. For example, copper sulphate readily reacts in feed, binds to other minerals and generally reduces the effectiveness of a carefully balanced ration due to negative effects on rumen microbes. Meanwhile, Intellibond copper is stable and has no negative consequences to cows or ration while offering better bioavailability or how much the cow actually absorbs.

When thinking about zinc oxide it may be variable in quality due to the manufacturing process, making precise mineral balancing in a ration slightly more difficult. It is important to ensure your mineral supplements contain at least a good proportion of highly available sources, such as Intellibond, that we know the animal may use.

Now we know it is important to challenge our traditional methods of mineral balancing and go beyond a level on the label. Ask your NWF representative about quality minerals in their premixes and farm minerals. Ensure you are using Intellibond for:

- High stability
- High palatability
- High digestibility
- High bioavailability
- Low solubility

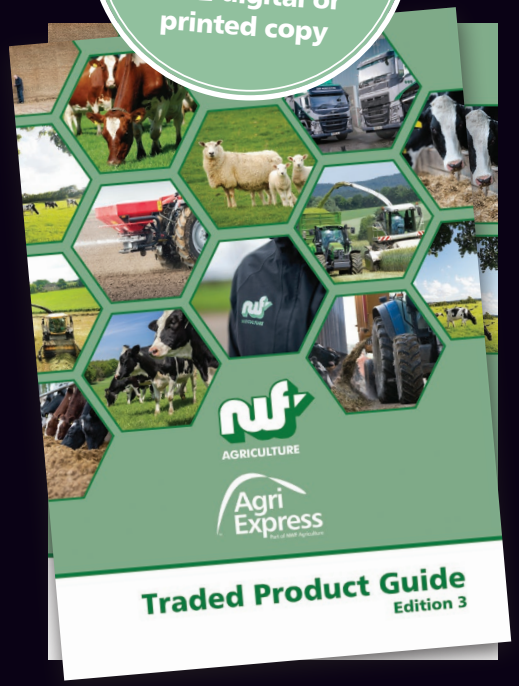
Seeing 1000mg/kg Intellibond copper on the label is equivalent to 2000mg/kg copper sulphate and offers better palatability, digestibility, bioavailability and stability

NWF offer a comprehensive range of high quality products available for your dairy herd and farm.

- Straights
- Sugar Beet
- Protected Feeds
- Protected Fats
- Grains
- Molasses
- Moist Feeds
- Biscuit Blends
- Supplements
- Rumen Paks
- Techmix
- Rock Salt
- Minerals
- Milk Replacers
- Grass Seed
- Maize, Cereal and Forage Seeds
- Fertilisers
- Silage Additives

NWF Traded Product Catalogue

Call for a FREE digital or printed copy



COMPETITIVE PRICES

Call for prices and to order
01829 797100

Focus on fields to maximise grass growth after a drought period

By Roger Bacon, Barenbrug Agricultural Key Accounts Manager

It is well known that well-managed grassland produces the cheapest feed throughout the year, whether it is cut to make silage or grazed by livestock. However no two years are ever the same and with weather patterns constantly changing seasons are becoming more extreme, with drier summers and milder sometimes wetter winters. This year has been no exception with a cold late spring, followed by a dry summer, with drought conditions in many areas of the country. Coupled with high fertiliser prices, increased fuel costs and uncertainty created by events in Eastern Europe have created challenges never seen before in global farming let alone UK farming.

From a dairy farming perspective, these challenges have exerted extra pressure on grass crops to produce good yields of high-quality forage with reduced N inputs in many cases. Yet ryegrasses, in particular Westerwold, Italian and Hybrids, are all hungry species that will respond to higher rates of N and utilise all of any nitrogen applied to produce good yields with decent protein, ME and D value levels. Perennial ryegrasses will also utilise 100% of the nitrogen applied. Consequently, starving the plants of N will result in a lower yield of poorer quality forage, along with the faster deterioration of the sward in terms of density and persistency.

Add prolonged drought conditions to the mix and it's a multiple whammy of factors that will have serious negative effects on grass production.

What can be done to counter these factors?

There are a number of key actions that can be used to offset and counter these factors;
Where nitrogen is the limiting factor consider using clovers to offset the supply of N from the application of artificial fertilisers. Remember clovers take time to establish so allow 6 months for white clovers in grazing leys to start fixing any amount of N. A sward needs 30-40 % white clover content at this level, white clover can fix up to 150kgs/ha of N a year. White clover is reasonably drought tolerant too.

Red clovers will improve protein levels of cutting leys and help mitigate reduced N inputs in cutting leys. An inclusion of 3kg/acre (7.5/ha) is needed in a mix and can fix up to 250kg of N/Ha a year. Red clover has a protein content of 20-22% and is fairly drought tolerant.
Be careful when introducing livestock to clovers as they can cause bloat.

Lucerne is a really useful crop on free-draining, light, drought-prone land due to its deep tap roots. It is a perennial crop that will last for 5-6 years and will give 3 cuts a year when established producing 17.5tDM / Ha being a legume it also fixes N, up to 200kg / Ha per year. The N is a real benefit to following crops.

Legumes require a pH of 6.5 and like to be sown between mid-March and mid-August.
We can also utilise the benefits of a number of other grass and herb species for drought tolerance such as soft-leaved tall fescues, Cocksfoot, Timothy which have deep root structures, particularly the soft-leaved tall fescues which produce deep roots with high biomass enabling them to access nutrients and moisture deeper (over 1metre) in the soil profile. The herbs Chicory and Plantain both have deep tap roots which help them cope with drought conditions well, they also have high mineral content, double that of perennial ryegrasses, and have anthelmintic properties which give additional benefits to animal health.

Sward Management

Maintaining good ground cover and dense swards to prevent evaporation of moisture from bare ground will help grass crops hang in there when it gets dry.

During drought periods it is tempting to try and cut or graze every last bit of grass from a field, however, doing so will induce even more stress and have a massively detrimental effect on the grass's ability to recover once it receives adequate moisture. Adapt the management of swards accordingly to alleviate some of the stress, this can be done by reducing stocking rates and increasing the length of the grazing rotation. Look after the residuals, this is key for good recovery leaving a longer post-grazing residual. When cutting lift the cutter bar on the mower to leave a longer stubble, an extra couple of inches has much more value in terms of energy and photosynthetic area to the plant for regrowth. Having a reseeding policy will also help as recent reseeds coped much better and recover with less long-term damage.

Catch crops

Utilising catch crops of Westerwold or Italian ryegrass following whole crop and cereal harvests will help fill the forage gap if silage has been fed through the summer months.

Managing drought stressed swards after rainfall

When the rain falls it will take time for a perennial ryegrass sward to fully recover from drought stress. Usually about 21 days, as during the stress period the grass plants have been forced to use their root reserves and deplete them so it is really important to look after the sward during this time. The recovering grass plant will not be able to utilise large amounts of N straight away. It will need to reach the 3rd leaf stage before it will start fully photosynthesising so apply lower applications of N from the first flush of growth and repeat again at 10-day intervals to maximise regrowth. Newer reseeds will recover quicker and probably fully whereas older poor-performing swards may be outcompeted by unproductive weed grasses and therefore will be more cost-effective to reseed.

www.barenbrug.co.uk

Can you read what your cows are thinking?

Cow Signals, for some, is not a new concept. It was introduced by two Dutch vets 20 years ago with a shared mission to increase cow survivability and profitability. They developed the 6 freedoms of the cow to help address the causes of chronic disease by looking at cow behaviour and their environment.

You can assess your own herd by looking, thinking and acting around the 6 freedoms summarised below.

Space

- Free cow traffic, is key for cow health and productivity, especially for the less dominant cows. Within a shed, there is a hierarchy and it's our job to accommodate all cows. Nothing should prevent cows from having access to feed, water or a cubical and dead ends should be avoided wherever possible.
- The floor surface is a key aspect to allow cows to express natural behaviour. "*Slippy areas in the shed will result in lower signs of heat, whereas tight corners or uneven surfaces may increase the chance of white line disease and other hoof problems*" Technical Manager and Cow Signals Master Trainer Abbi England comments.

Rest

- There is a positive relationship between resting time and milk yield. Abbi explains "*when cows are lying down 30% more blood circulates through the udder and whilst hooves rest and dry, so it is no surprise up to 1L of milk can be gained for every hour spent lying over 9 hours, to a maximum of 14.*"
- Cubicle dimensions and mattresses/bedding choices are key factors to consider when encouraging optimum resting times.
- Do your cows stand squarely in the cubicles and how quick do they lie down, what % of occupied cubicles have cows lying down in them and what % of those cows lying down are ruminating?
- The overall demeanour of the cows in the shed can give an indication of cow comfort, consider if cows are alert, active, fidgeting or quiet. "*Calm cows are a testament to management*", says Abbi.

Air

- Look out for fresh air-seeking behaviour, the air should be as fresh as outside.
- Signs which can give indications of poor air quality and ventilation include cobwebs, condensation, fast breathing, wet floors and mattresses.

Light

- For lactating cows 16-18 hours of 200 lux is required, the reverse (6-8 hours at 200 lux) is recommended for dry cows to encourage more resting. is recommended for dry cows to encourage more resting.
- Winter lighting should be a priority, not only can it help increase feed intakes, but also allows for improved heat detection.

Water

- Over 85% of milk is water - intake of water is critical!
- 1 water trough per 20 cows is paramount alongside the cleanliness of troughs and freshness of water.
- Cows drink for 30 minutes a day, they can drink 15L in one minute and drink the majority of intake within 1 hour after milking, highlighting the importance of water pressure and positioning of troughs.

Feed

- Cows eat for up to 6 hours a day but there are many factors involved in reaching optimal intakes. Feed space per cow is a good place to start, 75cm per cow is recommend for lactating cows and 85cm for dry cows.
- "*Cows are grazers and like to eat little and often, they can eat 8-12 meals a day and will spend 30-45 minutes at the feed barrier each meal. Dominant cows will always get to the feed barrier first, a minimum of 6 pushups is needed per day and arguably your most important pushup is 45 minutes after feed out*" Abbi comments.
- Neck rails and the physical barrier are also key considerations. Is your neck rail offset? If the barrier is restricting cows you will see neck rubs and cows standing eating at a diagonal angle to the barrier.
- Do you see inconsistent muck in the groups? Do cows have enough feed space or are cows sorting the diet? Feed presentation is key; consider chop length, mixing time and number of pushups. "*the Penn State separator and dung sieve can be useful tools to use in conjunction with a cow signals workshop*", comments Abbi.

  "*Cow signals is a simple, yet very effective concept but changes must be practical for your system and future goals. I have been working as a Master trainer for over 8 years and have seen a huge variety of systems benefit, it was certainly fundamental to the family farm becoming a consistent 40L+ herd*" says Abbi.

For more information on the Cow Signals concept, or to book a workshop on your farm contact your local NWF sales specialist.

Cow SIGNALS® TRAINING COMPANY

Genomics

With continued research and development in genetics, NWF Agriculture have been in touch with Josh Batterham BVSc MRCVS (Ruminant veterinary consultant) from Zoetis.

Here is a whistle stop Q & A on Geonomics!

What is genomics?

Genomics is a technology that examines the DNA of an animal to accurately predict its future appearance and performance, as well as a range of other useful information.

How does it work?

Genomics allows producers to reliably predict how an animal will perform in its environment by examining the slight differences in the genes the animal has inherited from each parent. By comparing each animal's genetic makeup (genotype) with a large reference population, it is possible to make a more accurate prediction about its potential compared to making assumptions based on parent performance alone.

When should you test and what information can I expect?

Animals can be tested as soon as they are born. The earlier they are tested the sooner data about their potential is available. Ideally, heifers should be tested before they reach 11 months old. It takes between four and five weeks for genomic test results to come back and producers then need time to review the information and decide which animals to retain, which to sell and which to put to beef.

Most genomic tests provide information on production, fertility and type traits, milk proteins and results for a range of known genetic recessives. CLARIFIDE® Plus offers more than standard testing by incorporating 14 key health and wellness traits. These 14 health and wellness traits are combined into a lifetime profitability index score called Dairy Wellness Profit (DWP).

What are the short-term benefits of genomic testing?

Short-term benefits can be seen in herds with excess heifers on the ground. These are typically herds that have increased their use of sexed semen during the past few years. By accurately identifying the weakest genetic merit heifers early in life and selling them, the average genetic merit of the retained animals will be higher. This means producers will be left with a cohort of heifers that better meet their herd and business requirements, and will be more profitable during their lifetime compared to the animals removed from the group.

Producers will also save considerable time, space, and money by not rearing surplus-to-requirements heifers. This is an important first step in any breeding programme and is enhanced by using genomic figures.

What are the long-term benefits of genomic testing?

Investing in genetic gain and genetic progress is a medium- to long-term strategy. The decisions made now will impact heifers who will be calving and joining the milking herd in around three years' time, so any genetic improvement will not be seen for some time.

By accurately selecting the best heifers to receive sexed semen, gains can be made in multiple areas, depending on the index used, including increased production, better health, improvements in fertility and decreases in somatic cell counts. It is important, at this point, to remember genetic gain is cumulative. This means it will keep growing and is also permanent, benefitting every subsequent generation.

The amount of genetic progress producers can make in any generation is affected both by selection intensity and the accuracy of the figures they are using to make that selection. Genomics primarily works by increasing the accuracy of decisions made. But by gaining greater confidence in the genetic potential of heifers, producers typically also want to increase selection intensity. This is either by deselecting more of the bottom-end heifers or by considering using advanced reproductive techniques (such as embryo transfer) to multiply the very top-end animals.

Summary

Genomically testing replacement heifers is a worthwhile investment for purebred dairy herds looking to make faster genetic progress in a range of areas, from efficiency to health.

Only by making better informed selection and breeding decisions will producers see a good return on investment, which is why it is essential they have access to good quality, timely advice when interpreting results.

Find out more at www.clarifide.co.uk

CLARIFIDE® plus

Export opportunities and how the NFU are working with industry to ensure British farmers are supported!

By Verity Richards, Policy Specialist for NFU.

Trade is an essential part of the dairy supply chain, vital for connecting supply with global demand. Whilst, understandably, we tend to focus on the day-to-day challenges, the impact of the drought this summer, labour shortages or the huge raft of consultations and government policy proposals, it's important not to lose sight of the fact that the UK is part of a global market and exposed to global trends.

In May (2022), a meeting of dairy traders from across the world came together to look at global markets and forecasts and how to maximise opportunity. Despite the stark message which came from the conference that the days of oversupply are dead, and traders could no longer count on a guaranteed and steady milk supply, there were clear signals and possibilities for growth. Demand for dairy around the world continues to grow, particularly demand for a high quality and traceable safe protein source. Increasingly we are also seeing the share of "local for global" rising, with less milk being consumed where it was produced. For example, the dairy market in Saudi Arabia is growing at nearly 5% per year.

Dairy farmers throughout the world are facing the same challenges when it comes to climate concerns, increasingly tough regulation, high input prices and changing consumer habits. But only a few are positioning to take advantage of growing demand. The US, for instance, have identified exports as the path to growth – and also as a commercial necessity. The UK also has the chance to optimise our collective strength and pull together to perform on the global stage. The British dairy sector has developed a fantastic reputation for some of the highest quality, sustainable products in the world. But to react to low inventories across the world, particularly in China, and meet this driving demand for protein, it is vital that we have the right agricultural and environmental policies to support our ambition.

In 2021 the NFU launched its Dairy Export Strategy which focused on unlocking new opportunities in international markets. The Strategy identified a range of actions and recommendations aimed at enhancing the dairy industry's export performance and adding value to British products. Key asks include:

- Forming an industry taskforce, in collaboration with government, aimed at improving and increasing dairy exports
- Government investment and partnership with the industry to drive dairy exports through trade deals, agricultural attaches and market development
- Encouraging investment in domestic processing capacity to take advantage of new markets
- Ensuring future trade deals do not undermine domestic standards

The NFU see an opportunity to come together to improve market access and ensure British dairy continues to thrive. With continued lobbying being done to ensure new agricultural policies focus on productivity gains alongside environmental ones and provide the right support for farm businesses. Whether that be through better access to finance, promoting our products abroad, providing the right tools and knowledge to help businesses respond to market signals or ensuring new trade deals are conducted with the interests of the agricultural sector in mind. Trust and collaboration across the supply chain is also essential for improving market access. The NFU's work on dairy contracts goes a long way towards this through the creation of fairer, more transparent supply chains.

Despite the huge pressures facing the industry today, we believe that the time is right to redouble and reinvigorate our efforts and to capitalise on opportunities to ensure the British dairy sector of the future is resilient, sustainable and successful.

www.nfu.org.uk

Dairy Herd Sustainability

By Beth Howells, NWF Technical Advisor

Delivering change in UK agriculture to meet our environmental targets represents both a challenge, and an opportunity. Increased costs of feed, fuel and fertiliser adding to food inflation alongside more extreme weather events are increasing concern across all levels of society. However this also brings opportunity when we recognise that improvements in our environmental impact and farm profitability are not mutually exclusive.

Environment

Spanning from looking at the carbon footprint of your herd's feed to looking at reducing the waste on farm, to renewable energies and nutrient management on your fields. Understanding what you have got through analyses; soil, grass, and forage (including minerals) are good building blocks to start from. By knowing what you have, you can take actions to improve; whether that is putting specific nutrients on the land to encourage soil health or rationing the cows' diets to complement the forage base.

Economic

A business should be profitable to invest in and promote sustainability. This does not always mean buying the cheapest! Animal health parameters (such as fertility, metabolic incidence, and lameness) should also be considered alongside performance parameters. For example, a cow could be achieving 30+litres per day, but if she is struggling to get back into calve, she is likely to be less economic in the future. Another area to look at is the longevity of animals in the herd, high replacement rates can increase costs through rearing, and low replacement rates could indicate that you are keeping on inefficient cows.

Social

People are the heart of any business; without quality staff, a business can be compromised with increased pressure and reduced motivation being a result if not managed appropriately. This does not only include wages, but also training, appreciation and a healthy working environment.

Consumer perception is another social dimension which impacts dairy farmers. Consumers fundamentally contribute to demand. Ensuring animal welfare is at the top of our agenda will help to show consumers the industries passion for the animals we work with.

How can NWF Agriculture help?

Not only can we support your business by supplying your feed, but we offer a range of services for you and your herd. From nutritional advice to mobility scoring to looking at your youngstock (these heifer calves are the future of your herd!), and sampling soil and forage, get in touch or talk to your local NWF Sales Specialists to see how we can support you!

Fusion is NWF Agriculture's concept surrounding all things sustainability. It incorporates 4 pillars; Operations, Raw materials, Diet & Formulations, and On-Farm Support to help you achieve your goals.

NWF Agriculture offers a range of diets called "NWF Fusion" which contains no Soya, Soya Hulls or Palm Kernel for dairy farms that prefer to avoid those materials altogether. This range is continuously being developed and currently includes:

- **Dairy Fusion**
- **HDF Fusion**
- **Fusion Pro**
- **Fusion Rearer**
- **Fusion Blends**

Lifetime impact of preweaning nutrient supply in dairy calves

By Georgina Thomas, Young Animal Feed Manager GB at Trouw Nutrition

The survival of replacement calves and heifers, the subsequent survival of lactating dairy cows in each lactation and the efficient conversion of feed into milk, all contribute to the environmental impact of dairy production. In recent years, early life nutrition of the calf has been recognised as having long lasting effects on health and productivity throughout the lifetime of the animal.

Elevating the level of nutrition supplied to young calves, by increasing nutrient supply via the milk feed, is associated with beneficial effects on growth and future lactation performance. LifeStart by Trouw Nutrition was introduced in 2014. The science-based programme has focused on the critical first months of a dairy calf's life. The programme has aimed to increase, improve and communicate knowledge on all areas of early life nutrition including milk quantity, milk quality as well as practical feeding considerations.

Over the last few years the LifeStart research group, alongside collaborators including Cornell University, has investigated growth, metabolism and lactation performance of calves fed two different levels of milk preweaning – elevated and restricted levels. After weaning all animals were reared together and later entered the dairy herd.

As anticipated calves fed an elevated level of milk replacer preweaning had a higher average daily gain, resulting in a weight difference at weaning. This body weight advantage remained until insemination, resulting in lower age at first service and a higher conception rate. The number of services required was also reduced. This trend continued into the first and second lactation, where improvements in first service conception rate were found.

During the first and second lactation, cows that were fed the elevated level of nutrition preweaning, yielded more fat and protein corrected milk, consumed more forage and maintained a lower body condition score. In addition to this the survival rate until 4th calving was significantly improved.

At specific time points throughout the trial blood samples were analysed in order to investigate any potential differences in metabolism between the two groups. Samples were taken at day 2, 49, 330 days of age and at 60 days in milk during the first lactation, blood samples were taken and analysed for over 900 blood metabolites. Analysis shows that multiple pathways which were affected by elevating preweaning nutrition, and that these differences were still expressed differently in the first lactation. These differences in long lasting metabolic configuration, can potentially explain the differences observed in performance and survival which were described in the study.

LifeStart Science by Trouw Nutrition continues to push the boundaries of calf nutrition research in order to support farmers with products and practical solutions to optimise calf and heifer performance. On farm examples demonstrate clear long-term benefits on fertility, survivability and lactation performance providing a clear return on investment. Investing in calf nutrition is an investment for the future herd.

Rumen development for optimal calf health and cow performance

By Elysha Chell, NWF Youngstock Specialist

With cows spending half of their time ruminating, getting the calf's rumen developed in conjunction with growth rates and optimal health is key to ensuring the calf's ability to utilise nutrients as cows, later in life.

Looking at a suckler cow and calf, those calves would stay with the mother for 6-9 months and be weaned gradually, whereas for the dairy counterpart, we want them fully weaned by 10-12 weeks. This results in a reduced milk feeding period and greater pressure on utilising nutrients from solid feed at a younger age.

Ensuring calves are healthy and growing is priority number 1 and 2. Ensuring a quality milk replacer is being fed in adequate quantities will fundamentally set the calf up for life (after the colostrum phase). Page number 24 and 25 highlight the importance of metabolic programming for future performance.

Priority number 3 is to develop the rumen. Optimal rumen development involves more than just size and muscularisation, rumen microbes also play a key role in performance. We need to carefully balance calves nutrient supply in early life in order to ensure efficient utilisation of the forage and concentrates fed in later life.

Starter feed

Milk will always be a calves preferred feed source so; quality, presentation and consistency of the starter feed is key to encouraging the calf's starter intake.

Solid feed intake stimulates the proliferation and production of microbial end products (Volatile Fatty Acids), which have been shown to initiate rumen epithelial development. Ensuring the starter feed is formulated to meet nutrient requirements using high quality, palatable raw materials is fundamental to health and performance.

Eating solid feed is a learned response, and how it is presented will have a big influence on how quickly the calf will sample it. Buying a palatable formulation is just the first step, it has to be offered fresh every day, in clean, easy to reach troughs/buckets in order to encourage intakes early. From day 1, calves should be exposed to starter feed, even if it is a small amount in a shallow bowl. Before weaning, calves should be eating at least 2.5kg of starter per day (and over 6 weeks of age).

Forage

Another important factor in developing the rumen is forage. Forage, such as straw, has several benefits; acting as a bulking agent; stretching the rumen, and also helps prevent parakeratosis (which is a hardening layer of keratin cells and presents a physical barrier along the papillae) which ends up blocking the absorption of the VFAs. Forage acts similar to a toothpick, and helps keep the developing papilla clean. It can also help stimulate cudding and buffering, which although not required to the extent of cows, it all benefits the calf and their rumen function.

For maximum intakes straw should be chopped 1-2 inches in size and just like the starter feed it should be provided fresh each day. It is important forage is provided in racks off the ground so as to not encourage calves to eat dirty bedding.

Water

Water is often the forgotten nutrient, especially in the winter months but it is another key influence on rumen development. Compared to its liquid counterpart, milk or milk replacer feed which enters the abomasum, water enters the rumen and creates an environment that allows rapid proliferation of bacteria, which will contribute to that all-important microbiome. Having water available will also encourage starter feed intakes (imagine eating dry crackers without any water, you would not eat many)!

Summary:

- Ensure starter feed contains quality ingredients and is palatable.
- Feed presentation is key! Calves are curious creatures so ensuring the starter is presented fresh and clean helps encourage intake.
- Forage should be available to aid rumen development.
- Water! Make sure there is fresh, clean water available at all times.
- Do not fully wean until calves are eating 2.5kg+ of solid feed (and over 6 weeks of age)! If you do then you are likely to compromise calf growth due to not bridging the energy gap.

Youngstock Compounds & Blends

	Compounds	Blends
 PRE-WEANING	**Calf Pellets** High quality starter pellet, suitable from birth until weaning.	**NWF Sweetstart** Premium starter mix, excellent for promoting early intake. **NWF Coarse Calf** High-quality calf starter ration available as a 16% or 18% protein mix. Contains high levels of hipro soya, sugar beet pulp & micronized flakes.
  POST-WEANING & HEIFER DEVELOPMENT	**Super Rearer** Specialist diets, to complement a grass silage-based diet, available as 16% and 18%. **Vital Rearer** Cost effective diet, to complement grass or silage-based diet, available as a 16% and 18%. **Deluxe Rearer** Specialist diet with elevated protein levels to suit straw systems.	**NWF Coarse Calf** High-quality calf starter ration available as a 16% or 18% protein mix. Contains high levels of hipro soya, sugar beet pulp & micronized flakes.
 HEIFER DRY COWS	**Drytime*** A comprehensive dry cow ration fit for first calving heifers. Feed something that contains Reashure (protected choline chloride) to help with colostrum quality and post calving health. **Available as nut, nuggets and blend.*	

For more information on NWF Youngstock feeds, contact the NWF Youngstock Team on 0800 756 2787.

Milk Replacers

The range of calf milk replacers from NWF Agriculture are formulated to provide outstanding nutrition using high quality, traceable ingredients. They enable fast cost effective growth and development at this critical stage in life.

NWF ULTRA LIFE - SKIM
24% Protein, 20% Oil
A LifeStart accredited skim-based milk replacer containing the full additive pak. It is suitable for accelerated heifer rearing programmes.

MILKIVIT ENERGIZED CALF MILK REPLACER
22.5% Protein, 25% Oil
A LifeStart accredited skimmed milk replacer to support optimal development, resilience to disease and longevity of calves.

NWF ULTRA MILK YELLOW
22% Protein, 18% Oil
A top quality, 100% milk protein skimmed milk replacer also containing the full additive pak. It is ideal for many systems, particularly those wanting something special from their youngstock.

NWF ULTRA LIFE - WHEY
24% Protein, 20% Oil
This is a LifeStart accredited whey-based milk replacer. It is suitable for accelerated heifer rearing programmes. This replacer contains the full additive pak.

NWF ULTRA HI PRO HEIFER
26% Protein, 17% Oil
This high protein, whey-based milk replacer is suitable for accelerated heifer rearing programmes. This replacer contains the full additive pak.

NWF ULTRA MILK BLUE
22% Protein, 19% Oil
NWF's most popular milk replacer. High specification formulation on a whey powder base. A generally good all-rounder calf milk replacer.

ULTRA MILK EMERALD
21.5% Protein 18% Oil
A skimmed milk-based replacer, containing Greenguard package ensuring that early bloom and healthy calves is promoted.

ULTRA MILK RUBY
24% Protein 20% Oil
A superior quality, whey-based calf milk replacer, with elevated levels of oil and milk protein to promote accelerated growth and development at this critical stage of life. This replacer contains the Greenguard package.

ULTRA MILK SAPPHIRE
22.5% Protein 18% Oil
A high-quality whey-based milk replacer, a good all-rounder replacer which has the addition of Greenguard to support digestive health and performance.

Are you ready for winter housing?

Hannah Williams, Clinical Vet at Sandstone Vet Group, Cheshire highlights some areas to consider as winter housing approaches.

YOUNGSTOCK

Housing

Are your youngstock sheds adapted for winter weather? Calf sheds need to be well ventilated, clean, dry and free from draughts at calf height. Moisture builds up in passageways and pens which can have a negative impact on calf health, increasing the risk of scour and pneumonia. Think about fixing the gutters and any leaking skylights you have been meaning to do all summer. Do your sheds have adequate ventilation? A lack of ventilation will create stale air, increasing the risk of pneumonia pathogens surviving in the environment and spreading between calves. One quick, easy way to test ventilation would be using a smoke bomb which will highlight problem areas in your calf housing.

Temperatures dropping to between 10-15°C will decrease the growth and performance of newborn calves. Calves may huddle, shiver and try to move away from draughts. Providing plenty of fresh, deep bedding daily, nesting areas and blocking draughts at calf height with stock board or bales will help to keep calves warm. Other things to consider are the use of calf jackets on newborn calves. During colder spells also consider increasing the quantity of milk replacer calves are receiving. This will help to maintain good growth rates.

Pneumonia Prevention

Calf pneumonia or bovine respiratory disease (BRD) is one of the costliest diseases in the cattle industry. The immediate measurable costs have been estimated at £43 per case, but it's the less visible costs that have the really big impact; heifers with a history of BRD before weaning are less likely to be inseminated or achieve first calving than heifers without BRD. Once they join the adult herd, their yield may be reduced even into their second lactation. Any heifers that need more than one treatment for BRD are much less likely to reach their second lactation. When you take into account the long-term impact of BRD it's easy to see how the cost can really stack up.

Prevention is always better than cure and developing a plan for your farm aimed at optimising calf health will be hugely beneficial. Calf health plans should include gold standard colostrum management, good housing and husbandry along with the use of correct vaccinations, to help reduce antibiotic usage on farm.

SANDSTONE VET GROUP

ADULTS

IBR Control

Infectious bovine rhinotracheitis (IBR) is a highly contagious cause of adult pneumonia. Clinical signs, including high temperatures with nasal and ocular discharge, loss of appetite and reduced milk yield, usually occur 2-3 weeks after a stressor or change in management e.g., winter housing. Consider IBR herd vaccination pre-housing to help reduce the risk of an outbreak.

Fluke treatment

Fluke can present as both subclinical and clinical infections in dairy cattle. Some farms will experience reduced milk yield and poor fertility whereas visible clinical signs include excessive weight loss and chronic scour. Dairy cows pick fluke up off pasture during the grazing season and therefore if diagnosed at housing we recommend using a suitable flukicide.

Preventing Lameness

Digital dermatitis is still one of the major causes of lameness in dairy cows, affecting both cow welfare and productivity. During winter months is generally when we see a spike in cases due to housing and increased slurry around the yards. Prompt treatment of cases is paramount to help reduce the spread through the herd. Monitoring feet through the parlour will help achieve this. Make sure you have a strategic foot bathing protocol in place, along with good slurry management on yards and cubicle housing.

SLURRY TREATMENT TO BUST THE CRUST

Make the most of your slurry. MicroZyme R is a biological product for use in the reduction of solids, odour control and nitrogen retention in stored liquid ruminant manure. The advanced slurry treatment protects the nutrient value and makes it easier to manage.

- ✓ Reduces solids, crust and odour
- ✓ Lowers ammonia emissions from slurry
- ✓ Less separation after mixing and a more consistent slurry
- ✓ Faster pump outs and easier to handle
- ✓ Preserves nitrogen content, optimising value as fertiliser
- ✓ Improves plant uptake, suitable for multi-cut systems

Meet the NWF team at:

The Dairy Show
on Wednesday 5th October

Brailsford Ploughing Match
on Wednesday 5th October
New location in Showering Pavilion overlooking cattle show ring

AgriScot
on Wednesday 16th November
Ringside in Highland Hall

Enquiries: **0800 756 2787** | Orders: **0800 262397**
E Mail: **nbteam@nwfagriculture.co.uk**

www.nwfagriculture.co.uk

SUPPORTING BRITISH FARMERS SINCE 1871