AGRICULTURE

# Dairy Bulletin

Edition 5

Includes Youngstock section

## Inside this issue

# Production, performance, price and planet.

Supporting cow health and performance whilst bearing in mind the planet!


**The Morgan family have farmed at Trederwen Hall for three generations. Neil alongside his family, run an all-year-round calving herd of Holsteins, with a few Jersey cows, just outside of Welshpool, Powys.**

With a keen fourth generation chomping at the bit, Trederwen Hall have made some shift changes over the past 18 months to become more sustainable, working with their vet, geneticist, and feed advisor.

In 2021, the dairy herd's diet consisted of a compound and blend which contained soya, palm kernel and protected fat. The overall crude protein of this ration was around 18%, incorporating the silage, blend and compound. Cow performance also reflected the high-quality diet, resulting in an average milk yield of around 28 litres with constituents of 4.1% butterfat and 3.4% milk protein, whilst managing unusual mastitis cases due to the hot weather experienced.

With pressure around sustainability intensifying further down the milk supply chain, the Morgan's reviewed the ration with Howard Brown, their NWF Technical Sales Specialist. They discussed how best to maintain performance and improve animal health whilst also looking at the origin of raw materials. Soya and palm kernel (PK) are currently the target raw materials by the processors. Although PK has mixed reviews for how beneficial it is as a nutrient source, it can be substituted quite easily. Soya on the other hand, with its amino acid make-up and high protein analyses, can be a bit trickier to substitute.

NWF Agriculture offers a range of products which are specifically formulated with raw material origin and quality of feed in mind. The NWF Fusion range features four products: Fusion HDF, Dairy Fusion, Fusion Pro and Fusion Rearer, along with bespoke blends.

Neil and Howard decided to feed NWF Fusion Pro 16, a 16% crude protein, high glucogenic, protected wheat top nut. Which contains 40% protected product materials: Ultra Starch-W and Ultra Pro-R. Soya, soya hulls and protected fat were also removed from the blend, to not only help reduce the overall carbon footprint figure, but to maintain and increase performance. This ration now runs around 17%, and typically contains 766 kg/ ton less of $CO_2$ eq compared to the previous seasons.

To get the nutrient specification and properties similar to the likes of soya, Ultra Pro-R is used, a high-quality vegetable protein which as a result of precise treatment of rapeseed meal which has high bypass properties. Ultra Starch-W is a precisely treated wheat to increase its bypass, offering an effective alternative to raw materials such as maize.

Although the diet was changed, predominately to meet processor and supplier demands, Trederwen Hall found there was an improvement in herd performance, with the average yield increasing to 31 litres. Concentrate use per litre has reduced slightly and the constituents have improved as shown in table 1.

***Table 1: Summary of milk production before and after the NWF Fusion implementation***

| | Pre "sustainable" | NWF Fusion ration |
|---|---|---|
| **Milk yield (per cow) L** | 28 | 31 |
| **Butterfat %** | 4.1 | 4.2 |
| **Protein %** | 3.25 | 3.45 |
| **Urea** | 280 | 220 |

In addition to improved milking performance, Trederwen Hall have seen a somatic cell count reduction, from 160 to 80 indicating that udder health has improved. Health and performance cannot be mentioned without talking about fertility. Where fertility indicators have remained consistent, achieving a calving interval of 375 days and conception rate of 42%. Kingshay Dairy Costing Focus Report (2022) highlighted their average conception rate of 38% and their calving interval of 393 days.

**NWF Agriculture would like to thank the Morgan family for their continued support and business.**

# Production growth expected for 2023/24 but hinges on a good spring

*By Patty Clayton, Lead Analyst, Dairy at AHDB*

**GB milk production for the 2023/24 season is forecast to reach 12.46bn litres, 0.5% more than the current milk year, according to AHDB's March forecast update. The current season is expected to finish at 12.39bn litres, up by 0.2%. The improvement in yields seen since September 2022 boosted the current season total, which was running behind throughout the first half of the season by around 1-2%.**

The improvements in milk production in the second half of the 2022/23 season were predominantly driven by higher yields, encouraged by the high milk prices paid through the winter months. Although feed costs remained high, and silage availability was variable across the country, milk prices were sufficiently high to warrant purchasing rations.

Cow numbers remained relatively stable through the winter, with the size of the GB milking herd in January 2023 only 0.8% lower than a year earlier. This is the smallest annual decline since January 2018, according to data from the British Cattle Movement Service.

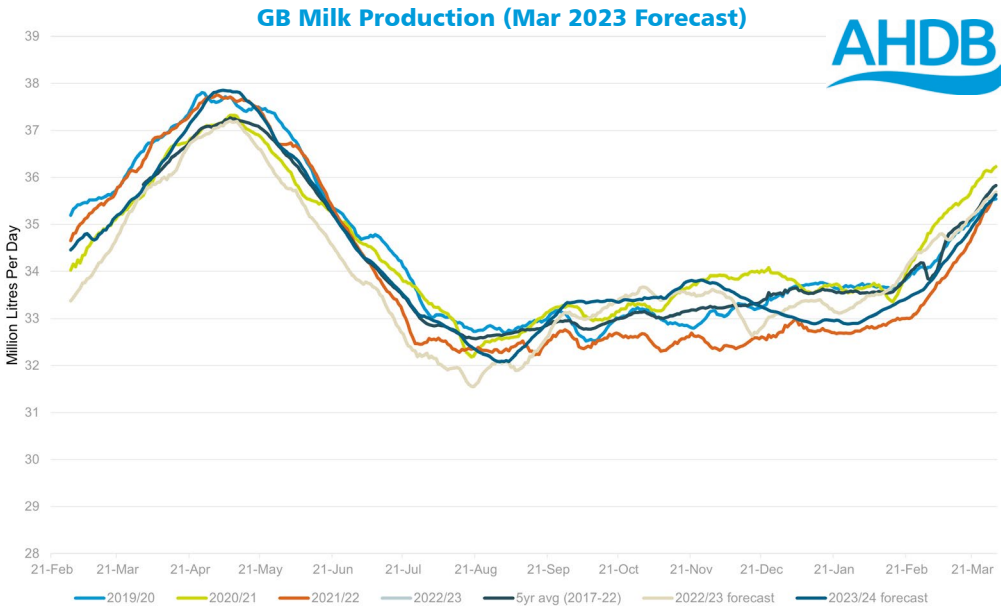
At the latest AHDB Milk Forecasting Forum in early March, it was generally agreed that yields would continue to remain strong through the spring period while farmgate prices remained high and cows were put out to grass. However, some risks to production may develop in the second half of the season when working capital requirements increase against the backdrop of declining milk prices.
In general, inflation in key input costs has slowed in recent months, although prices for fuel, fertiliser and feed remain high in historic terms. With announced cuts to milk prices in the first three months of 2023 ranging from 3.0ppl to 6.45ppl, and further cuts expected in the lead up to the spring flush, farm margins will come under increased pressure through the season. How much pressure will vary across farms depending on the timing of input purchases and renewing of energy bills relative to the size of price cuts by respective buyers.

Input prices and milk prices can be tracked on the AHDB website. Data can be found in the Dairy markets and prices section (https://ahdb.org.uk/dairy/dairy-markets)

Pressure on farm finances could be further exacerbated if grass growth in the spring does not allow for depleted silage clamps to be replenished. The combination of increased production costs, lower milk prices and strong cull cow prices could lead to higher-than-expected destocking, potentially limiting production over the winter months.

Overall, the AHDB baseline forecast assumes yields will begin to fall back following the spring flush, while the GB milking herd will remain relatively stable. Yield growth through the summer and autumn is expected to slow from the current levels of around 2-3% to more typical annual growth rates of 1-1.5% per annum. However, these may be even lower if milk prices fall below break-even levels, or forage availability is tight.

The next update to the AHDB forecast will be in June, when there will be more certainty over price levels and silage availability.




**GB milk production forecast - March 2023**

| m litres | 2021/22 | 2022/23 | 2022/23 | 2022/23 | 2023/24 | 2023/24 |
|---|---|---|---|---|---|---|
| | Actuals | Actuals | Forecast | Yr-on-yr | Forecast | Yr-on-yr |
| Apr | 1,118 | 1,094 | | -2.2% | 1,120 | 2.4% |
| May | 1,157 | 1,135 | | -1.9% | 1,150 | 1.3% |
| Jun | 1,068 | 1,041 | | -2.5% | 1,060 | 1.8% |
| Jul | 1,031 | 1,019 | | -1.1% | 1,035 | 1.5% |
| Aug | 1,003 | 989 | | -1.4% | 1,000 | 1.1% |
| Sep | 975 | 976 | | 0.1% | 980 | 0.4% |
| Oct | 1,010 | 1,033 | | 2.3% | 1,030 | -0.3% |
| Nov | 974 | 1,006 | | 3.3% | 1,005 | -0.1% |
| Dec | 1,010 | 1,025 | | 1.5% | 1,025 | -0.0% |
| Jan | 1,015 | 1,032 | | 1.6% | | |
| Feb | 924 | 950 | | 2.8% | 3,050 | -0.7% |
| Mar | 1,074 | | 1,090 | 1.4% | | |
| Year | 12,359 | | 12,389 | 0.2% | 12,455 | 0.5% |

*Source: AHDB. Note: Figures in italics are provisional. Figures in red are forecasts.*

Sign up to AHDB's Forage for Knowledge newsletter to receive the latest grass growth and quality figures
**ahdb.org.uk/knowledge-library/forage-for-knowledge**

# Heat Stress this Season

*By Adam Clay, NWF Technical Director*

**Temperature and humidity both play a role in thermal stress. Using the Temperature Humidity Index (THI) enables farmers to determine the level of summer stress on dairy cows. The Thermo Neutral Zone for dairy cows is 5-20°C, stress symptoms begin at a THI of 68; temperature of 24° and a relative humidity of 20%. With the UK average humidity over 70%, the heat stress threshold is reached at temperatures as low as 22°C.**

## Impact on yield

Daily exposure to a THI of 68-71 could result in 1.1kg/cow/day less milk and at THI 72-79 you can expect 2.7kg cow/day less milk (Dussert and Piron, 2012). This is a result of the impaired rumen balance, the fall in rumen pH and the increased risk of acidosis.

## Impact on metabolic requirement

Heat stress causes the animal to increase heat dispersion by increasing subcutaneous blood flow, panting and drooling. This increases maintenance energy needs by an estimated 20%, meaning that part of the cow's production energy will be diverted to thermal regulation.

Most of the heat production in dairy cows is due to rumen fermentation. The cow will reduce her DMI by 10-30% and be selective to what she eats; less forage, as roughages increase rumen activity and therefore heat.

## Impact on fertility

Heat stress can decrease reproduction performance in three ways:

1. Oestrus intensity reduces, heat detection becomes more difficult. *(Gwazdauskas et al., 1981; Wolfenson et al., 1988)*.
2. Fertility is reduced:
    - A 10-20% drop in conception rates.
    - Pregnancy loss at maximum THI over 69 *(Garcia-Ispoerto et al., 2006)*.
3. Early embryo survival is compromised:
    - Embryos are more likely to develop slowly and abnormally *(Putney et al., 1989)*.
    - Increased oocyte cell death further reducing opportunities for pregnancy success. *(Zeron et al., 2001; Al-Katanani et al., 2002)*
    - Heat stress is detrimental to the follicle that encloses the oocyte cell and can lead to more small and medium sized follicles and reduced dominance *(Hansen, 2013)*.

## Five tips to counteract heat stress

| | |
|---|---|
| 1 | Ensure water is always clean, fresh and readily accessible. |
| 2 | Install fans and/or sprinklers in the cow shed. |
| 3 | Supply a larger quantity of feed in the evening when it is cooler, forage digestion creates a higher internal heat. |
| 4 | Make available a shaded area. |
| 5 | Adjust and supplement the diet through buffers, bypass feeds, supplements and farm paks. |

# Dive into data to reduce mastitis cases

*Jenny Bellini, LLM Farm Vets*

LLM Farm Vets
First in the field

**Mastitis is a well-discussed topic in the dairy industry; however, it is still one of the biggest drivers behind antibiotic use in dairy herds, noting that there are large usage variations between farms. Udder health is key and some antibiotic use could be avoided or be better targeted if producers worked more closely with their vet to prevent mastitis.**

The average mastitis incidence across the UK herd is between 30 and 35 cases per 100 cows, with the top 25% of units seeing as few as 16 cases per 100 cows. Below 10 cases is exceptional, but it's something all producers can aim for, particularly when according to the latest Kingshay figures, the cost per case of mastitis is £334.

Where to start? Data is key when reducing mastitis incidence. Some farmers will keep meticulous records of cases, and others will think that they don't have any useful information to even begin a mastitis investigation. However, most of it is already available to you through somatic cell count (SCC) data generated by milk recording organisations including CIS and NMR. This data is mastitis gold. It is extremely useful and an ideal starting point when investigating mastitis incidence, patterns and causes in herds. As vets, it forms the foundation of mastitis prevention and control plans. Additionally, it can be shared directly with us so that we can be proactive.

At LLM, we use specific programs including TotalVet and Digifarm from Kingshay, to build a picture of the herd's udder health. SCC can tell us a lot but adding information about clinical cases to what's being seen in the SCC data can help to create an even clearer picture. Data can give a steer on the type of bugs that can be causing a mastitis issue in a herd, whether the issue is environmental or contagious, or if the issues are occurring during lactation or being picked up during the dry period. For example, if a herd is experiencing a high number – 20% or more – chronic mastitis cases (chronic = repeat cases) and herd average somatic cell count rises above 200,000 cells/ml throughout the year then this can be indicative of a contagious mastitis problem. We can then look with the farm team at when, during their lactation, cows are picking up mastitis and how well they are recovering from infection.

Patterns are great because they can really help to pinpoint a problem, and, contrary to expectations, they can often tell us more about the likely causes of mastitis than milk bacteriology alone. Work with your vet to look at patterns and create a clear picture of what's going on in your herd; this will allow you to target areas to reduce the number of mastitis cases and ultimately antibiotic use.

## Case example: Autumn-block-calving herd

**40 mastitis cases per 100 cows – considerably higher than the national average.**

SCC data revealed a low herd average, and there wasn't an issue with 'chronic' cows, but the herd was seeing a high number of clinical cases, often after the first 30 days of lactation. The herd data pointed us to an environmental lactational mastitis problem. If the clinical cases were the result of a contagious pathogen, Staph aureus for example, we'd expect to see a high bulk SCC and more chronic cows. Knowing this we reviewed treatment protocols and tackled the source of the problem by looking at the herd's environment, and particularly what had changed when clinical mastitis incidence had first started to increase. Everything was assessed within cow housing – the passageways, feed fence and cubicles. It was noted that there was no brisket board in the cubicles and the cows were lying too far forward - potentially 'mucking' in the beds, with a high percentage of beds requiring cleaning each day.

A length of flexible plastic pipe was installed along the front of the cubicles to help better position the cows when lying down. Since there's been an 83% reduction in clinical cases.

Everything we've done – and continue to do – is based on the foundations of SCC and clinical-case data. Without that, we'd be unable to make a targeted plan and make real progress in a relatively short space of time.

# Award Winning Cornwall Dairy Farmer

**After taking the leap to set up on his own, Heydon Dark of Higher Skewes Farm in Cornwall has won Young Dairy Farmer of the Year at the British Dairying 2022 Cream Awards, after just two years of running his own dairy farm. Growing up on a high-yielding robotic dairy farm, black and white cows were always in Heydon's future!**

Heydon became a herdsman for eight years on a local dairy farm after leaving school at 16 before setting up on his own. His flying herd of 100 milking Holstein/Irish Friesian are milked twice a day and produce an average of 7,500L with average constituents of 4.6% butterfat and 3.5% protein.

With Heydon being the only employee, his business operates on a low-cost system with an emphasis on efficient grazing and utilising forage.

The NWF Agriculture 18% compound is maize based with high SBP, containing NWF's protected protein and protected fats to suit the requirements of high yielding dairy herds. The ration has been specifically formulated to promote yields and reproductive health.

Although there are many benefits of rearing replacement heifers, the flying herd system is currently working well at Higher Skewes Farm, allowing the farm to be run efficiently, "*One day I may transition and rear replacements, but for now, the labour and cost-saving elements of not rearing calves outweigh this*", Heydon comments.

Since making the switch to NWF feed a year ago, milk yields have improved from 6,500 to 7,500L. Heydon states. "*Working as a herdsman for eight years before going alone helped me gain experience and increase my knowledge which has helped me get to where I am today. I have also received support from Andrew Mason, NWF Southern Sales Director, who has helped me manage the herd from a nutritional point which has been a major part of the continued yield improvement*".

In terms of the future, Heydon says, "*I would love to continue expanding my herd in an efficient manner, continuing the ethos of my lower cost system, focusing on keeping costs to a minimum whilst maximising output and yields from grazing and grass forage*".

"*Over the next five years I can only see the dairy industry getting stronger, although alternatives are becoming more readily available, questions regarding the sustainability of these are becoming more prevalent, along with a great understanding of the fantastic nutritional benefits of cow's milk*", concludes Heydon.

## NWF Technical Services Portfolio

**NWF offer a comprehensive range of technical services to support herd management, available through your local NWF Sales Specialist.**

- Rationing and diet formulation
- Forage and feed analysis
- Mineral analysis & soil sampling
- Dung & diet sieving
- Costings and milk production forecasting
- Interherd Plus
- Body condition & locomotion scoring
- Cow & calf signals
- On Farm NIR
- Carbon calculator


# Parlour versus Robot

**Andrew Griffiths has a 400-cow commercial Holstein unit based at Bulls Green Farm, near Nantwich that evolves around automation. He has six Lely A5 robotic milking systems and one Lely Vector robotic feeding system.**

*"I like technology, it's the way forward, the benefits soon add up to the extent they've covered the milking robots' investment cost within seven years. You have to spend money to make money,"* says Andrew Griffiths who is committed to building a profitable farming business, resilient to whatever comes down the track. Furthermore, self-sufficiency is key; the unit's water supply has already been established, whilst the next project features power with plans to install solar panels.

| | Herringbone parlour | 6 x A5 robot |
|---|---|---|
| **Labour** | Six full-time + night milkers | Two full-time + two part-time |
| **Cows** | 350 | 400 |
| **Yield (kg/lactation)** | 10,000 (3 x day) | 11,000 (3.3 visits) |
| **SCC** | 168 | 125 |
| **Bactoscan** | 25 | 16 |
| **Preg Rate** | 30 – 35 | 42 |
| **CI** | 390 | 369 |

Apart from cost savings and solving potential labour issues, since introducing the milking robots in 2013 Andrew has been able to improve overall herd performance. He would not be milking cows if he had to go back to operating in a parlour.

*"Equally important, investing in automation has introduced flexibility. I'm able to spend more time with our young children,"* adds Andrew who provides further insight on key areas.

**Labour:** milking used to take 12 hours a day and we had a good team of six plus part-timers, whereas nowadays myself, my herd manager Dave Hastings and two-part-time staff manage the entire operation including DIY AI. Working days have been reduced for both of us to a reasonable eight to 12 hours and we have a lot more time to spend on other jobs, for example, we've moved from contractors to do the majority of our own field work including multi-cut silage and reseeding.

**Management and herd health:** the team have become better herd managers since they are seeing the cows more often than when they were putting on cups in the parlour. The person managing the beds knocks up every single cow whilst first thing every morning, Dave spends 15 minutes logging on to Lely's software programme to check the health report, udder health and heat detection for each herd member; any issues are immediately flagged up so myself and the team are able to instantly respond. We no longer have to wait for any visual signs or the monthly NMR report.

*"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,"* adds Andrew.

**Welfare:** the cows now have the opportunity to make their own decisions – when to milk, eat and relax. Bulls Green Farm has a lot of visitors and they all remark how unbelievably chilled the cows are. Their behaviour impacts on myself and Dave leaving us with clearer heads to make decisions – both technical and business.

## The Costs

Annual fixed cost savings amounting to over £35,000 are being made at Bulls Green since Andrew Griffiths replaced a tractor-drawn tub feeder with the Vector. Reduced time and diesel have cut fixed costs over threefold to less than £300 a week. It means the system paid for itself quite easily within the first four years after installation in 2015.

*"The four-hour daily routine of filling and mixing the feeder wagon has been replaced with one hour a day spent filling the kitchen. And we've been able to free up a tractor and its associated depreciation costs*", adds Andrew.

That's not all. The system has introduced several other benefits which are contributing to the unit's performance efficiency. Andrew is currently programming the Vector to daily mix eight different diets – milking cows, milking heifers, close-up dries, far-off dries, bulling heifers, in-calf heifers, weanlings and calves aged four months and over.

**Consistency and precision:** the system is guaranteed to accurately weigh each component and deposit it into the tub for mixing every single time. Before, they could be caught out overfilling the bucket, particularly on a weekend morning.

The Vector is able to manage very small amounts of different components, for example, Andrew will programme a 180kg mix for the youngest calves, something they could never achieve with the mixer wagon.

**Frequency - little and often:** the milking cows for example are fed between 14 to 21 times a day. The system is not only continually mixing and feeding out small amounts of fresh feed, but also providing every animal with the same opportunity, even the more timid ones come up to the feed fence whenever they wish.

**Minimal wastage;** troughs are cleaned out every two weeks and end up with just a barrowful; previously they spent 30 minutes every day and cleaned out up to 100kg of waste.

**Tractor-drawn mixer wagon v Vector, fixed cost savings**

| | Tractor-drawn mixer wagon | | Lely Vector | | |
|---|---|---|---|---|---|
| ***Labour** | **Hrs/wk** | **£** | **Labour** | **Hrs/wk** | **£** |
| Loading, filling, feeding out. Pushing up | 28<br>14 | £420.00<br>£210.00 | Filling and maintaining kitchen | 7 – 8 | £112.50 |
| **Power** | | **£** | | | **£** |
| **Diesel: loading, mixing, feeding out | 260 l/wk | £273.00 | **Diesel: cutting forage, filling kitchen | 76l/wk | £79.80 |
| **Diesel; pushing up (ave 3.5 x day) | 70l/wk | £73.50 | ***Electricity: loading, mixing, scanning, feeding out, pushing up | 455kW/wk | £91.00 |
| **Total weekly running cost** | | **£976.50** | | | **£283.30** |
| **Total annual running cost** | | **£50,778.00** | | | **£14,731.60** |

*Source: Griffiths/Lely.*

**Labour £15/hour. **Diesel 105p/litre. ***Electricity 20p/kWh*

# Getting supplementation right improves dairy efficiency, performance and profitability

## Balancing energy sources can help reduce environmental footprints

If precision is key to cost-effective milk production, understanding the true energy values of fats will underpin building a successful diet for healthy, fertile dairy cows.

While forage analysis is a key building block when formulating a diet, understanding the role of fatty acids and the true energy content of different oils and fats is crucial to optimise performance and health with tailored supplements, while also controlling costs.

Each fatty acid has a unique role in the animal, so it is important to ensure the right fatty acids are fed, in the correct balance, to meet the cow's needs at different stages of lactation.

The key is to achieve better utilisation of the ration. A combination of rumen-inert fats are needed, based on balanced essential fatty acids, and slow-release rumen conditioners and fermentable sugars.

This approach typically achieves optimal rumen function and pH stability, supports digestion, maximises dry matter intake (DMI) and ultimately increases the diet's energy content. The unique combination of fatty acids in the palm-free fat supplement envirolac from UFAC-UK, can help improve efficiencies and performance, while providing a more sustainable energy source than palm-oil derived alternatives.

In terms of energy values, several factors determine the overall Metabolisable Energy (ME) that is available to the cow, including digestibility. At 29.8 MJ/kg DM, the palm-free envirolac has more energy than a palm-oil based calcium soap (NASEM 2021), so it increases energy density of the diet, crucial for high-yielding dairy cows, especially in early lactation.

The supplement also supplies C18:1 fatty acid, helping to reduce body condition loss, especially in early lactation. In addition, long chain Omega 3 fatty acids help support fertility and also gives the immune system a boost.

Launched in 2022, following ground-breaking research through the University of Nottingham, the new palm-free fat supplement has been shown to increase milk yield and quality, whilst also offering a lower carbon footprint than palm-oil based market alternatives.

During the research trials at Nottingham, conducted by Professor Phil Garnsworthy, it was found that envirolac can offer producers significant financial gains, through improved quantity and quality of milk produced and reduced cost of concentrate feeding.

"*The original aim of our trial was to demonstrate that envirolac performed just as well as a calcium soap, however what we actually discovered was that there was a significant increase in milk yield and butterfat production, with no impact on dry matter intake,*" says Professor Garnsworthy.

Short-listed for the RABDF Innovation Award and highly commended at the national Cream Awards in 2022, the initial results of the envirolac trial indicate a potential financial benefit to the UK dairy sector in excess of £85 million, based on the market prices when the research was unveiled, for the products under trial and liquid milk.


The rumen-inert fat supplement envirolac supplies the essential long chain Omega 3 fatty acids EPA and DHA, also found in UFAC-UK's Omega 3 supplement, available from NWF Agriculture.

The Omega 3 supplement brings all the benefits previously associated with fishmeal, by providing the optimum ratio of Omega 6: Omega 3 fatty acids. The Omega 3s come from the most effective marine oil source, with EPA and DHA helping to support high yields, reproductive performance and immunity.

**Speak to your local NWF Sales Specialist or call 01829 797100 for more details.**

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

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- Biscuit Blends
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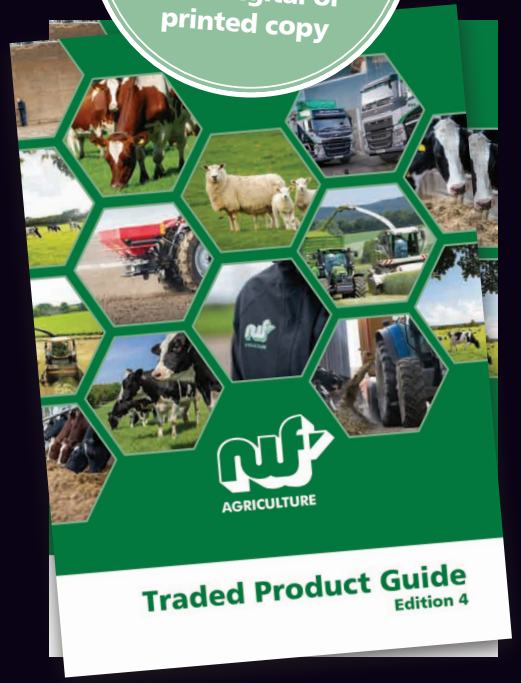


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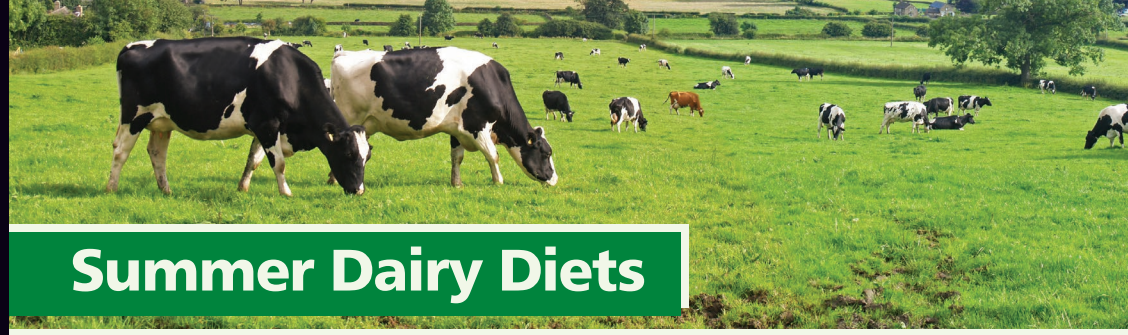


# Summer Dairy Diets

**As we know, grass can be a very cost-effective feed. It is a good source of rumen degradable protein, highly fermentable carbohydrates and sugars, so making the most of it can not only help the bottom line but maintain animal performance.**

There are some challenges when cows are at grass. Grass has high levels of oil which can "coat" the fibre in the diet, decrease acetate production and subsequently reduce butterfats. It is also low in structural fibre and high in fermentable sugars, which can result in a drop in rumen pH, increasing the risk of acidosis. Consistency is also another challenge, in both quality and intakes. Moisture, ground conditions and overall grassland management will all influence this. To supplement grazing NWF offer a range of summer dairy diets to suit all systems.

## High Fibre Diets

**High digestible fibre diets to promote rumen function and drive butterfats:**

- HDF Octane (WM, WI)
- HDF Fusion (LT, WM, WI)
- Butterline (LT, WI)

**Digestible fibre feeds with good energy levels designed to balance high starch/low fibre rations:**

- HDF Empire (WM, WI)
- Lakeland HDF (LT)
- Senator (LT, WM, WI)

## Starchy Diets

**High quality starch diets to drive recovery from negative energy balance, fertility and yield:**

- Octane (WM)
- Goldstar (WM, WI)
- Fusion Pro (WM, WI)
- Dairy Fusion (LT, WM, WI)

**High Starch diets with good energy levels designed to balance fibrous forages:**

- Target (LT, WM, WI)
- Gold Standard (LT, WM, WI)
- Gold Stellar (LT, WM)
- Empire (LT)

## Youngstock Diets

- Calf Pellets (LT, WM, WI)
- Fusion Rearer 16 and 18 (LT, WM, WI)
- Vital Rearer in range of proteins (LT, WM, WI)
- Deluxe Rearer (WM, WI)
- Bespoke Blends (LT, WM, WI)

**The NWF summer diets are available from the production sites as noted by initials:**

**WM** – Wardle Mill, Cheshire
**WI** – Wixland Mill, Devon
**LT** – Longtown Mill, Cumbria

# More than just soya free

**NWF Agriculture has introduced steps to manage and reduce the carbon footprint of the business through improving efficiencies, raw material sourcing, renewables, manufacturing processes and operations.**

As an industry that utilises by-products to produce food for a growing population, the agricultural sector already has strong sustainable credentials. Every stakeholder has a role to play in further improving agriculture's position. NWF Agriculture, as a carbon contributor and as a feed manufacturer, are supporting farmers with the best possible sustainable feed options.

The NWF Fusion Dairy range is free from soya, soya hulls, palm kernel and maize. There are efficient and cost-effective rations available for early lactation and high yielding cows.

- The Fusion range features a high fibre, starchy and a high protected product diets, available in different proteins to suit a range of systems.
- Ultra Pro-R is a high-quality vegetable protein which, as a result of precise treatment of rapeseed meal, contains a high level of DUP.
- Ultra Starch-W, a protected wheat, aids rumen health to achieve feed utilisation, reducing the rate of 'quick fizz' in the rumen helping to prevent a pH drop.
- Formulated using British and European raw materials where possible, the Fusion range has less than half the CO2 equivalent (GFLI number) than other compound feeds.
- Manufactured at NWF feed mills in Cheshire, Cumbria and Devon.


Fusion

*Sustainability for a better future*

## NWF FUSION PRO

A high-performance ration that contains high levels of Ultra Pro-R and Ultra Starch-W to ensure high levels of bypass protein and starch to support high performing cows.

## NWF FUSION DAIRY

A high energy feed with good glucogenic nutrients to support milk production and early lactation. Available in a range of proteins.

## NWF HDF FUSION

High fibre compound with quality ingredients formulated to balance high starch or grazing diets. Ideal for systems requiring high milk fats. Available in a range of proteins.

## NWF FUSION REARER

A specialist rearer diet to complement grass silage and grass-based diets. As part of NWF's Fusion range, it is formulated with raw material provenance in mind, whilst supporting performance and does not contain soya, soya hulls or palm kernel. Available in a range of proteins.

## NWF FUSION BLENDS

Bespoke blends can be formulated to optimise home grown forage and feeds, without the use of soya, soya hulls and palm kernel.

In an aim to ensure all customer requirements are met, NWF Agriculture can offer Cargill Triple S Credits should milk buyers/retailers require.

**NWF Agriculture will continue to develop the Fusion feed range formulating and manufacturing sustainable compound rations for dairy, beef and sheep.**

# Reduce the grass staggers threat this spring

*By Adam Clay, NWF Technical Director*

**Estimations suggest that 1% of cattle in the UK will experience clinical grass staggers, with up to 30% of all clinical cases resulting in death and significant direct losses.**

Grass staggers, otherwise known as grass tetany or hypomagnesaemia, is a very real threat for suckler and dairy cows at turnout. It is easily managed by assessing and managing the on-farm risks and considering options as the rapid flush in grass growth increases.

Grass staggers are defined as a deficiency of available dietary magnesium. Magnesium is a key macro-nutrient in the diet and is essential for bone growth and maintenance, nervous system function and also as an aid to fibre digestion in the rumen.

Rapidly growing spring grass typically has a low magnesium content (0.1 to 0.2% in dry matter) which, combined with its low dry matter and rapid transit through the rumen, can result in very low levels of magnesium absorption into the animal's bloodstream. Magnesium is predominantly stored in the bones of the animal and consequently is not readily available when dietary supply is compromised. Livestock rely on daily magnesium supplementation to maintain adequate blood magnesium levels at times when risk is increased such as spring, and autumn.

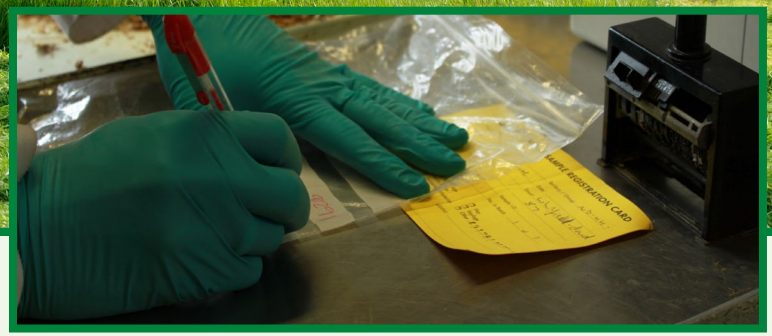
To help alleviate the risk of grass staggers, long fibre should always be available in the form of hay or silage, to help slow the transition of wet spring grass through the rumen. It is also essential to maintain dietary energy levels (notably starch and sugar) to help prevent excess rumen ammonia. Dry matter intake needs to be maintained, whilst an adequate supply of minerals, trace elements and vitamins, including a suitable supplementary sodium (salt) source is also essential to re-address the sodium to potassium ratio. Finally, and most importantly, it is vital to ensure livestock has daily access to a suitable magnesium supplement.

Magnesium is typically an unpalatable mineral, so presenting it in a molassed free-access lick, ensures livestock have a reliable supplement to complement their diet. Spring magnesium molassed mineral licks, from NWF Agriculture, contain 15% magnesium along with a range of minerals, vitamins and trace elements, including sodium. It is suitable for feeding to breeding and lactating cows at risk of grass staggers to help supplement grazing at this time of year.

Additional magnesium can also be supplied within compound feeds and blends through the addition of powdered minerals when formulated by a nutritionist.

Ideally, magnesium supplements should be offered up to two weeks pre-turnout to better prepare stock for changes. Then, by turnout, they are familiar with the supplements and are not faced with a deficit.

# Identify Optimum Cutting Time



**Quality of grass rather than quantity is key when planning the cutting time for this season's silage. It is important to choose the right time to ensure that forage quality and fibre digestibility is maximised.**

With continued escalating costs of on-farm inputs, homegrown forage remains the cheapest available feed for herds therefore focusing on quality will increase production and benefit margins.

To identify the optimum cutting time it is recommended to do a pre-cut fresh grass test. NWF Agriculture operates an FAA approved forage laboratory at Wardle in Cheshire and processes over 8,000 silage samples per year. The fresh grass analysis reports DM, crude protein, D value, ME, NDF, ash, oil A, sugar (water soluble carbohydrate), nitrate N, and buffering capacity.

It is advised that grass should not be cut before nitrates have decreased to below 0.10%. Above 0.25% Nitrate N cutting should be delayed and another fresh grass sample should be taken after 3 to 5 days.

The analysis of fresh grass samples is free for NWF customers with results processed within 24hrs* of receipt of the sample. (*48hrs during peak season).

Analysing grass before cutting provides the facts to ensure you cut at the right time to prevent silage quality and cow performance becoming an issue in the winter.

# Managing your maize for greater yield potential

*By Andy Stainthorpe, Pioneer Sales Manager*

**The most critical management decision for maize growers is selecting the appropriate hybrid. To realise maximum yield potential, the hybrid's characteristics must match the field attributes, such as altitude, latitude, and soil type. To achieve the highest yields, the following hybrid traits should be considered:**

PIONEER®
MADE TO GROW™

- High top-end yield potential. Review yield data from comparable environments to identify hybrids with the highest yield potential.
- Full maturity for the field. Plan to ensure the crop will be planted at the optimal time to ensure the full growing season is utilised.
- Good emergence under stress. This helps ensure uniform stand establishment and early pollination, which can minimise stress during what can be a critical period.
- Above-average drought tolerance. In certain areas of the country, and on light soil types, periods of drought are possible. Check out how hybrids have performed in similar scenarios.
- Resistance to common diseases. Leaf, stalk, and ear diseases disrupt normal plant function, divert plant energy, and reduce standability and yield. Consider resistance to eyespot and fusarium stalk rot.
- Take care when sowing after grass. Wireworm infestation can reduce plant stands so consider purchasing seed treated with an insecticide, such as ibridtrin, especially if the maize is following an old pasture.
- Good standability often helps to minimise harvest losses.

**A wide range of hybrid maturities from extra early to late are available from NWF Agriculture for the 2023 season. Different hybrids in the range are suitable for forage, biogas and grain.**

**The following varieties are recommended:**

- **P7179:** A new hybrid for 2023 sowing in the UK. In PACTS trials it has shown itself to now be the earliest maturity hybrid in the range, delivering higher dry matter yields, higher grain yields and higher starch contents for this hybrid maturity.

- **P7326:** Trials have shown P7326 rapidly achieves 30% dry matter and produces high starch content with good yields. It adapts well to cultivation on less favourable locations where heat is often limiting.

- **P7034:** The first hybrid of this maturity that has dent type grain and has been bred specifically for the cool maritime locations found in the UK. This hybrid flowers early and produces silage with a very high starch content and starch yield. Due to its faster starch degradation rate, it should be clamped last and fed first, thus smoothing the feeding transition to new crop silage.

- **P7948:** Suitable for sowing in the open on favourable sites, as well as under film on less favourable sites. P7948 has excellent standing ability and can produce a particularly large stature plant.

- **P8171:** A very late maturing hybrid. It should be grown only under the most favourable sites in the open where an early harvest is not needed, and a high dry matter yield is sought. Under film it can be grown on favourable sites.

One of the most crucial factors in achieving high maize yields is establishing a population density sufficient to allow hybrids to maximise their yield potential. Historically, population density has been the main driver of yield gain in maize – improvement of corn hybrid genetics for superior stress tolerance has allowed hybrids to be planted at higher plant populations and produce greater yields.

Establishing a population density adequate to allow hybrids to maximise their yield potential is one of the most critical factors for achieve high maize yields. Historically, population density has been seen as the primary driver, however, with improvements in hybrid genetics for superior stress tolerance, it has allowed hybrids to be planted at a higher population and produce even great yields.

Crop rotation is a highly recommended practice to maintain consistently high maize yields. This is because rotating crops can help break the damaging cycles of insects and diseases that can decrease crop yields. In addition to crop rotation, achieving the highest maize yield also requires a comprehensive nutrient management plan and soil testing to determine the appropriate levels of phosphorus, potassium, and nitrogen in the soil.

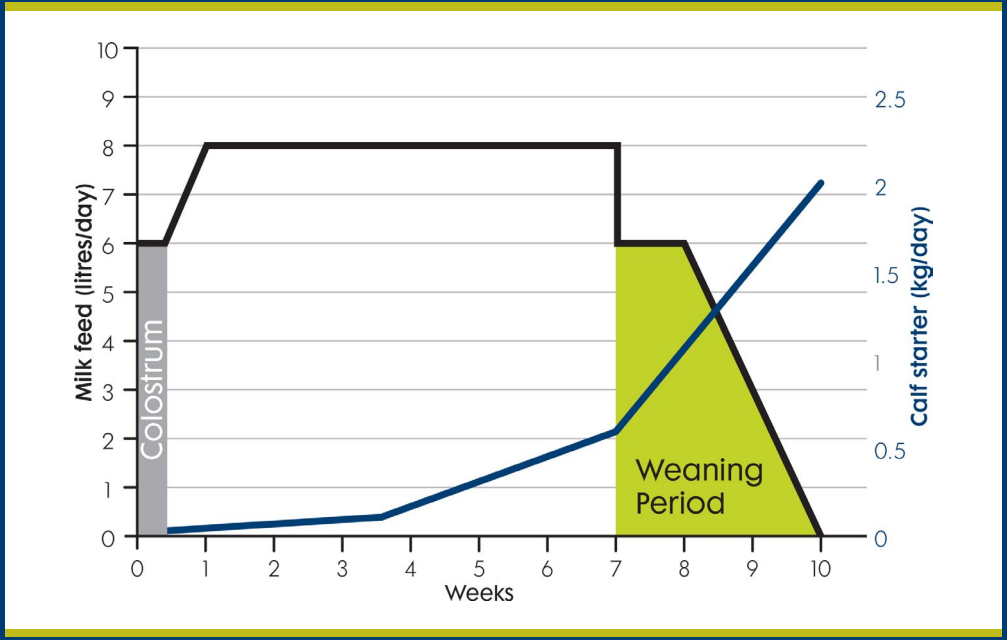
# Give your calves the best start

trouw nutrition
a Nutreco company

*Dr Laura Tennant – Young Animal Feed Technical Advisor*

**Trouw Nutrition LifeStart accredited calf milk replacers (CMR) ensure the nutritional and physical parameters satisfy calf requirements, providing you with the confidence that they are safe to feed at an elevated level. This enables you to capture long term performance benefits by optimising the development of the calf. The ingredients used, and the processing technology applied, ensures that the finished product optimises digestibility to the calf as well and solubility ensuring stability in the solution.**

Selecting the correct milk replacer is even more important now than ever to hit the long term performance targets of modern high genetic merit calves and we must ask the right questions to understand different specifications of the calf milk replacers available. There can be significant variation in CMR specifications on the market and although sometimes creating confusion for the customer, it does at least ensure that there is a product available to match the objectives and required price point of all calf rearing systems. Calves are most feed efficient on milk replacer as opposed to calf starter feed, so managing the feed curve is important to get both growth from milk and weaning down on enough starter.




*Recommended feed curve*

When selecting your calf milk replacer, careful consideration should be taken on product type, overall digestibility of the protein and energy, as well as the appropriate feeding scheme on farm – working with your NWF youngstock specialist and vet will ensure all information can be collected and considered to support an informed decision.

## Calf Performance and CMR

The balance between digestible energy and high-quality protein sources provides the nutrients required for calves to grow, develop, and achieve performance targets. When reviewing calf milk replacer specification and feed curves, it is important to consider nutrient intake.

**Remember** every **100g** of average daily gain in first two months of life, you can expect approximately **225kg** of extra milk in first lactation. *(Alex Bach, 2020)*

LifeStart Science by Trouw Nutrition continues to push the frontiers of calf nutrition research in order to support farmers with calf milk replacer products that optimise calf and heifer performance.

## Conclusion

Feed highly digestible and well formulated calf milk replacers supplied by NWF Agriculture to:

- Enhance Feed Conversion efficiency
- Exploit genetic potential
- Optmise DLWG
- Achieve ideal development
- Promote resilience to disease/ and longevity

Research by Trouw Nutrition has shown that elevating the plane of nutrition pre-weaning not only leads to higher calf growth rates but improved long term heifer performance. In addition, the latest research demonstrates clear ongoing benefits on fertility, survivability and lactation performance providing a clear return on investment.


## The NWF calf milk replacer range is formulated to provide options for every calf rearing system and budget.

### NWF ULTRA LIFE - SKIM
LIFESTART SETS LIFE PERFORMANCE

**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
LIFESTART SETS LIFE PERFORMANCE

**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.

### 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.

### NWF ULTRA LIFE - WHEY
LIFESTART SETS LIFE PERFORMANCE

**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 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.

# Calf clubs

## An opportunity to share, learn and improve

*By Emily Linton (BVSC Cert AVP (Cattle) MRCVS), Torch Vets*

TORCH FARM VETS

Torch Farm Vets, which covers Devon and parts of Cornwall, launched its Youngstock Club two years ago and it has steadily grown in both member number and scope. "*We acknowledged that, while we have a vast amount of data for milking cows supported by regular veterinary visits, the calves can sometimes be overlooked,*" Vet Emily Linton BVSC Cert AVP (Cattle) MRCVS who leads the project, supported by vet-techs. "*Getting calves off to a good start, doing all you can to prevent disease and optimise performance is not only more sustainable but also more economically viable.*"

Club members benefit from 12 visits a year, tailored around when the herd calves and calves will be checked with a weigh tape, health scored, and total proteins also tested. Information on morbidity and mortality is also collected.

"*Before long, we could see that there was a lot of variation between herds in all aspects of performance,*" Emily adds. "*But, by being on the farm more frequently and observing systems, we could also spot where tweaks and adjustments could take place, which could often make a significant impact on calf health.*"

### Critical control points

Through reviewing different farm situations, it has been possible to identify some critical control points. The Wisconsin Calf Health Score was used to ensure that performance monitoring was standardised and to help provide a robust baseline for each unit. "*It is worth pointing out that recommending significant change or investment is rare; most of the time, an adaptation to something already being done is all that is needed,*" she adds.

**Colostrum** is frequently the starting point with discussions much more wide-ranging than simply intake in the first few hours of life. "*Most farms have a refractometer, and the vet-techs have been able to train the team on how to use them,*" Emily explains. "*Freezing Johnes-free colostrum for situations when it is needed is something that all calf club members now do as well.*"

Active, stress-free calving without intervention delivers a calf that is keen to suckle and will enjoy optimum passive transfer of immunity via colostrum. Studies have shown that only 52% of dairy heifer calves had an adequate transfer of immunity via colostrum.

"*Without colostrum supporting the calf's immunity, it is hard to safeguard calf health. We now work with farmers to regularly monitor total proteins which checks how well this has taken place and informs us if intervention needs to occur.*"

# Calf clubs *(Continued)*

**Hygiene** in the calving pen, calf housing and feeding equipment is also something that varies hugely. "*By sitting down and looking at benchmarking reports across the group, we can point out what is achievable to those underperforming in this area. Backing this up it up with simple, clear, practical tips and hints has proved successful*".

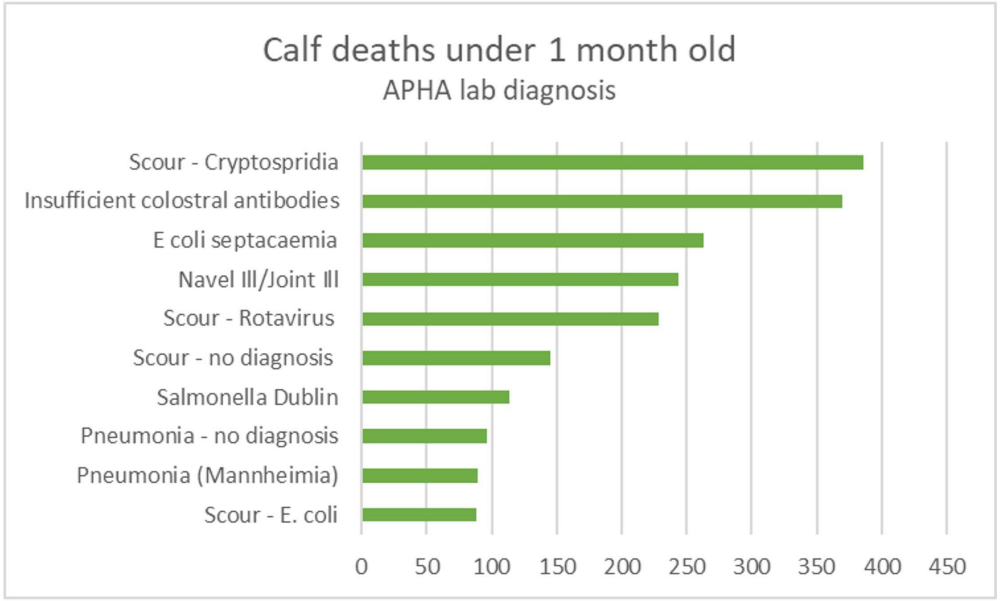
**Some key points around hygiene that have helped farmers adapt include:**

- Thoroughly clean the calving pen between calvings
- House calves in small groups of similarly aged calves, adequately bedded in a well-ventilated, draught-free environment
- Work done by AHDB and Nottingham University showed better DLWG when calf pens were cleaned out every 30 days or less
- Keep all your feeding equipment and milk prep area as clean as you would your own kitchen
- Last but not least, clean equipment with detergent and hot water, as well as disinfecting – just disinfecting without thoroughly washing out is a waste of time and money!

The third critical control point is **observation, early detection and intervention**. Scour, for example, can go from a calf being fine to very unwell and needing intervention rapidly, within 24 hours in cases of E. coli.

Scour is the number one cause of death in pre-weaned calves and spotting it early, then acting, is key. A protocol or standard operating procedure can be useful here, especially if different people are responsible for looking after the calves.

*Fig 1. Data courtesy of APHA*




At the first sign of scour, NSAID therapy and oral rehydration therapy (ORT) paves the way for a more rapid return to health. Antibiotics are rarely indicated with most cases of scour being caused by non-bacterial pathogens or being nutritional in nature. When E. Coli is cultured from scour samples, resistant strains are commonly seen.

"*Knowing what is happening with the calves, establishing a baseline in the first few monthly reports and identifying areas of good and less good performance is extremely powerful. Regular visits mean it's then possible to identify what changes are needed, and to guide and support the farmer through them. Show a second benchmarking report six or 12 months later where an area has moved from underperforming to doing well is the visible reward for their changes and a real light bulb moment!*" Emily Linton concludes.


*1. Atkinson (2016) Welsh Youngstock Project*
*2. www.sciencedirect.com/science/article/abs/pii/S0167587721000647?via%3Dihub*

# Out & About

**NWF will be attending a number of events in 2023, visit our trade stand for latest advice, offers and refreshments.**

**Staffordshire County Show**
on Wednesday 31st May and Thursday 1st June

**Royal Cornwall Show** on
Thursday 8th, Friday 9th and Saturday 10th June

**Penrith Show**
on Saturday 15th July

**Nantwich Show**
on Wednesday 26th July

**North Devon Show**
on Wednesday 2nd August

**Garstang Show**
on Saturday 5th August

**UK Dairy Day**
on Wednesday 13th September

**Westmorland Show** on
Wednesday 13th and Thursday 14th September

**Cheshire Ploughing Match**
on Wednesday 27th September

**Dairy Show**
on Wednesday 4th October

**Brailsford Ploughing Match**
on Wednesday 4th October

**Borderway Agri Expo**
on Friday 27th October

**AgriScot**
on Wednesday 22nd November

# Interested in a career with NWF?

NWF Agriculture has exciting opportunities for sales specialists to join the sales team across Scotland, the North West, Midlands and the South West.

Successful candidates will sell a comprehensive range of ruminant compound feeds, blends, supplements, additives, molasses, grass seed and other products along with technical services.

**Discover more, visit**
**www.nwfagriculture.co.uk/careers/**

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

**www.nwfagriculture.co.uk**

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