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Your NWF Newsletter – Issue 27



AGRICULTURE



Photograph of Hillbarn & Jackpot Pedigree Holsteins, Caerphilly

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Earlier this year, NWF National Business Development Director Richard Hughes visited the Keenan headquarters in Ireland to hear more about the PACE system. Here he gives his feedback from the visit.

PACE has been developed to enable consistent physical ration preparation, to track performance and generate global performance and feed input data. Keenan scientists, field nutritionists and engineers are working with the largest feed efficiency database in the world.

Keenan's sophisticated mech-fibre PACE control unit combines feed information, production requirements and processing control to produce and monitor optimum rations that consistently deliver performance to agreed production targets. Output data is constantly fed back into the input equation, so

production and cost efficiency are constantly being fine-tuned. It is possible to track who is filling the mixer wagon, and will show immediately if too much feed – or too little – has been loaded. The operator is given feed quantities required, loading sequences and processing (mixing) time.

All this is based around the forage on farm and what the production targets are. Feed intake is monitored daily, as well as costs and feed efficiency.

Using PACE, from 2013 – 2014, cows produced 46kg more solids per annum, and feed efficiency improved from 1.19 to 1.29. Data showed that 3,160 farms in 14 countries using the system produced more milk per cow after 12 months.

Visit www.keenansystem.com



CPD for NWF sales team

As part of NWF Agriculture's commitment to excellence in customer service and feeding advice, all the NWF sales team are registered on the AIC Feed Advisor Register. The Feed Adviser Register (FAR), run by the Agricultural Industries Confederation (AIC), is a new register for feed advisers and is intended for people that provide advice on feeding livestock to farmers.

The register has been set up by AIC and the feed sector in response to Government, industry and customer demands predominately in the areas of Greenhouse Gas emission (GHG) reductions within the livestock sector. There are currently over 1,300 feed advisers in the UK on the register, monitored and audited by FAR, which provides a range of continuing professional development (CPD) measures to maintain advisers' FAR status.

The NWF sales team carry FAR ID cards to use on farm demonstrate that they are fully compliant with the FAR. For customers, the FAR provides assurance of the standard of advice they receive from a registered feed adviser.

Further information on the scheme can be found on the FAR website at www.feedadviserregister.org.uk



New NWF Agriculture MD:

'Building on our strengths for the future'



Andrew Downie

New Managing Director of NWF Agriculture Andrew Downie says he will be using the business's wealth of experience and 'world class sales team' to take it forward into a bright future. Mr Downie, who joined NWF from The Silverspoon Company where he had been Head of Sugar Operations, said he had been hugely impressed by the passion and commitment shown by all staff during his first couple of months in the role.

"I'm thrilled and excited to be given the opportunity to take NWF Agriculture forward. It's a business more than capable of dealing with the challenges facing the marketplace; the company values of customer focus, open and honest communications, looking ahead to being better and better and the 'one team' mentality will reinforce our core strengths as we move forwards," said Mr Downie.

He added that while recent changes NWF had experienced in staffing were potentially unsettling in any business, such change also opened up great opportunities too.

"Of course the dynamic changes, but as an outsider joining the company it has been clear to me just what an excellent team we have at NWF. Already, I have seen younger managers stepping forward to take up the challenge of driving the business forward and that is excellent for the future.

"NWF is a significant player in the UK market and has the advantage of sufficient scale to allow it to grow and maximise its asset base. At the same time as we continually target growth, I believe the company is responsive and nimble enough to take advantage of opportunities as they arise that a larger business, with multiple stakeholders, would struggle to do.

"I am looking for us to continually respond to a marketplace which offers the moving targets of a changing customer base, shifting industry patterns and turbulent milk price. We will be looking to optimise what we do today, think about what we offer tomorrow and be ready to respond to acquisition opportunities as they arise," said Mr Downie.

He praised the success of the Wixland Mill operation in Devon as a great example of establishing scale supply of quality feed to a region and said NWF would be using the ingredients of that success in developing the Dumfries business.

"At the moment we have a foothold into a huge market with the Dumfries plant; it is my intention to become a major player in that marketplace. But it won't stop there – it is about constantly looking for the next opportunity," said Mr Downie, who added that customer service and innovation in products and services would remain at the heart of everything NWF did.



Focus on summer grazing



Richard Hughes

NWF National Business Development Director Richard Hughes looks at making the most of grass this summer.

With the majority of cows now out and warm, wet weather pushing grass growth on, ensuring dairy cows are making the most of summer grazing is a critical part of management. To do so, it's worth recapping on some key points:

1. Leaf stage 3-3.5 is the best for grazing grass
2. The ideal cover range for grazing is 3,300-1,400kg DM/ha. DM/ha. At first grazing aim to hit a residual of 1,400 kg/DM as this will influence quality for the remainder of the season.
3. Average growth during season 60 kgs, with a range from 20kgs DM/day up to over 90kgs DM/ha /day on a few occasions during optimum conditions in the season
4. Average realistic milk yield from April to September in M+ 10 litres

Grass growth, or more specifically leaf appearance rate, is influenced predominantly by soil moisture and temperature. In the spring, a new leaf appears every six days (allowing for an 18-day grazing rotation) but, as summer progresses, this drops off to every seven to nine days (a 20-30-day grazing rotation).

Each plant has only three live leaves; the fourth (oldest) dies. It is the second and third leaves which produce the highest sugars, highest leaf to stem ratio and the fastest growth; getting grazing management right means keeping plants in the key leaf stage of 3-3.5.

Figures show that, nationally, the trend for limited reseeding of pasture is holding steady, with very little increase in swards less than five years old in the past eight years. The vast majority of managed grassland remains swards over five years old; the age at which productivity (ME and yield) begins to sharply fall off.

Add this to AIC Fertiliser Statistics which show nitrogen application rates have fallen by around half (from 125kg/ha) since 1997, and you get an idea of why it pays to be realistic about milk production from grass. The table shows the variation in milk from grass which might be expected from both a typical or more 'grassy' summer grazing season, as well as what was on a research unit looking to maximise milk from grass.

	Typical Summer	Grassy Summer	Research Farm
	Milk Yield M+ litres		
April	7	9	23
May	14	16	26
June	13	22	23
July	10	17	19
August	6	9	17
September	0	4	14

Source: FVNTNI Milk from Grazing Monitor 2005-2010 and BGS Milk from Grass 1991

As you would expect from the growth curve of grass over the growing season, early May to late June/early July is the peak milk from grass period. The research farm was able to extend this at both ends of the season by both close management of the sward (removing surplus and managing shortage) and identifying 'quality' grazing time.

The latter is based on SAC research which showed grazing activity over a 24-hour period was lowest between sunset and sunrise, but showed a peak post-afternoon milking during the period 7-9pm. Whilst not practical for all herds, for those looking to maximise milk from grass it can be worth offering fresh grazing in the evening with the option for cows to then return to housing or buffer feeding areas after sunset.

Know what you have

As detailed above in the key points, the ideal is for cows to be grazing swards from a cover of 3,300kg DM/ha down to around 1,500kg DM/ha. Grass plate meters can be used to assess cover effectively, and NWF also offers a fresh grass analysis service via its onsite laboratory in Cheshire to give an accurate insight into what is in front of your cows.

Knowing what you have – whether that is a surplus or a shortfall – then allows planning and management to smooth out milk yield fluctuations. Where a surplus is forecast, removing excess grass via topping or silaging, with cows tightly grazed behind an electric fence, means grass quality is kept to an optimum.

Where a shortfall is forecast, stocking rates need adjusting and buffer feeding may be required to maintain yield. This is

particularly an issue around late summer/early autumn, when grass quality (ME and digestibility) begins to taper off; sharp falls in milk yield at this time can be slow to bounce back going into housing.

Even those on New Zealand type extended grazing systems may need to consider supplementary feeding. After problems with the system during the early years of its introduction in the UK, developments in management have seen changes including up to 500kg of compound to supplement grass, as well as the use of smaller, crossbred types.

Know what you can expect

One of the issues around milk from grass is how much a cow can physically eat (both fresh and dry matter intake). Where grazing

periods are curtailed (for example by accessibility, availability or ease of management) intake will be a limiting factor.

In a six-hour grazing period, DMI can vary from 7.2kg to 10.8kg; even with eight hours solid grazing, the highest DMI you might expect is 14.4kg. On a sward with an ME of 12MJ/kg DM, a cow needs 14kg DMI to achieve M+17 litres.

Rightly, many dairy farmers look to maximise milk from grass; to do so, sward quality, cow management and accurate information on what you have available is essential. NWF offers technical advice and grass analysis via the NWF sales team and and the Technical Team to ensure you make the most of grass this summer.

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within 24hrs



On site laboratory to analyse

- Fresh grass
- Silage – grass, maize, whole crop
- Haylage

Ask your NWF Sales Specialist for details.



Understanding the role of copper in fertility

Copper plays an essential but complex role in cow fertility. NWF Technical Manager Scotland Patricia Goldie looks at getting copper inclusion right in the ration.

When it comes to fertility, getting the ration balanced for energy is critically the first step – however it's still possible for copper levels to trip us up. Copper sulphate is the widest used supplemented copper element and is a common inclusion in dairy cake. It is normally supplied at a suitable level to not cause any toxicity concerns, yet will help bolster naturally occurring copper levels in silages.

One of the biggest problems with using copper sulphate, however, is that if the diet naturally contains an increased level of antagonists such as molybdenum or iron, then the actual copper availability from copper sulphate in the rumen is greatly reduced. This means the copper available to meet the cow's requirements is also reduced.

In the past, the diet has sometimes been deemed 'low in copper' and advice has been to 'feed more copper'. This extra copper sulphate is no more available to the cow than the original supply, however it is still circulating in the body and is eventually stored in the liver. If the cow is then subject to stress (calving, for example) then the liver dumps a massive amount of this stored copper into the bloodstream in toxic and fatal amounts.

Fortunately, there are alternative sources of copper available for supplementing a diet with antagonist concerns.

There is also a chemically-engineered source of copper, the exterior of which is protected by a thin protein layer which allows it to pass through the rumen, avoiding all antagonist challenges, and into the blood stream via the small intestine. This is a very useful piece of technology, but care is needed to ensure supplement levels are appropriate. Again, if we are providing something in the diet which is more available, we need to be careful how much of it we provide.

Monitoring herd copper status is a real challenge. If a cow is stressed (she may be in your freshly calved group), she will have

large amounts of copper circulating in her blood which has been released from the liver; if we take a blood sample at this point, then she's going to read 'high'.

In reality, her copper supply could actually be poor, as it is being taken up by the antagonists. Blood samples really do have their place in determining herd-wide copper; however we must take real care in which animals we sample, and how many are sampled.

Herd copper status can only be truly determined by a liver sample, and the only true reading we can achieve is a biopsy whilst knowing the actual weight of the liver (liver weights will vary from animal to animal, and there is no way of truly determining the copper % without knowing how much liver you're dealing with in the first place).

The ultimate key to copper concerns is based on gathering information:

Address your ration with your feed advisor; is it actually meeting the energy requirements of a peak yielding cow?

Complete a copper audit on farm with your feed advisor. Include silage mineral analysis, bore hole water analysis, current mineral feed rates, boluses, bucket licks etc. What is your total copper delivery?

Address any antagonist levels identified in your silage mineral analysis and water supply. Are these historically high? NWF can provide a bespoke mineral to be fed alongside concentrates for these situations, providing protected copper supplies to assist; however this must be done in conjunction with a copper audit to evaluate the total amount of copper being fed on farm.

If you have any queries, please contact your NWF Sales Specialist or call 0800 756 2787

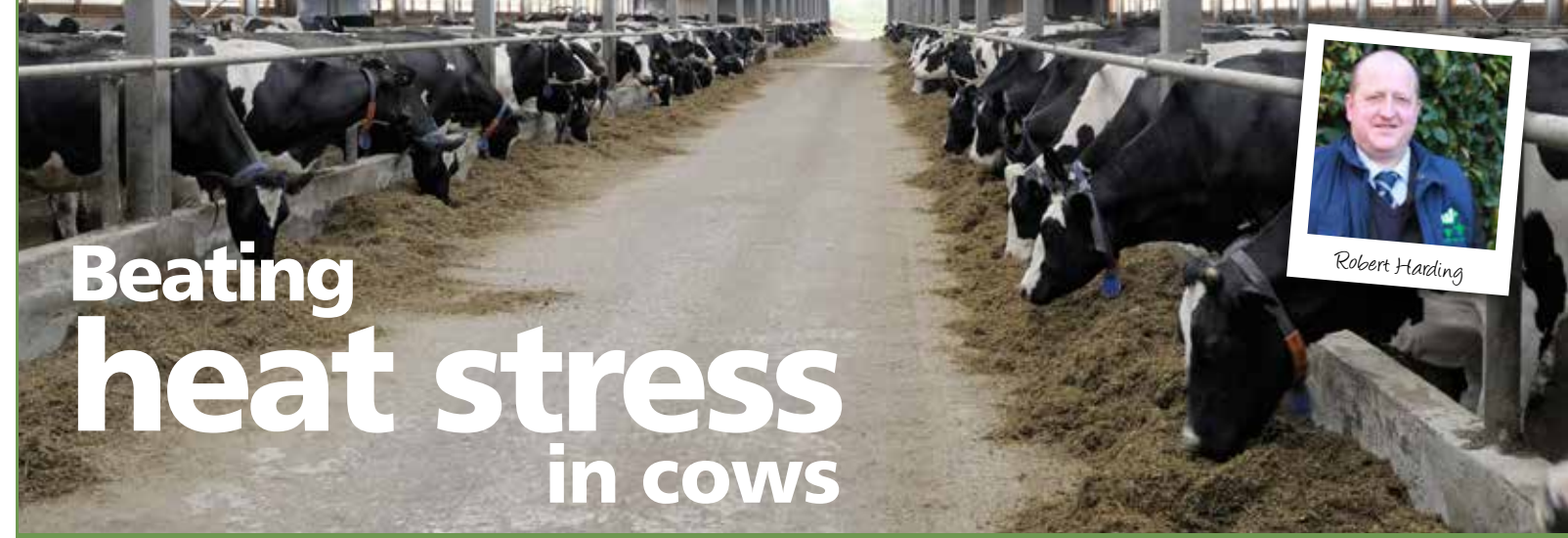
GRASS WATCH

NWF Technical Solutions sits at the heart of NWF Agriculture as a source of information specifically designed to help our sales specialists help you get the most from your business, writes Carolyn Hulland, NWF Technical Co-ordinator.

One of the many services offered as part of Technical Solutions is GrassWatch, a subscription service brought to you in association with Trouw Nutrition GB. It provides you with a weekly report and a monthly summary of all data, including fresh grass and pre-cut averages.

Our sales team can work with you and the data provided by GrassWatch to generate an accurate picture of current grass availability and quality. This can then be used to calculate a realistic milk yield from forage target.

As well as grazing management, GrassWatch allows you to ensure sufficient land has been set aside for silage production. Managing grass for grazing and ensiling right now means more milk from grass, optimum yield and easier ration formulation throughout the winter with reliable silage stocks in the clamp or bale stack.



Beating heat stress in cows

Keeping cows cool during extended periods of summer heat and sunshine in our normally temperate climate can be challenging. Rob Harding, NWF northern team sales specialist, looks at beating heat stress.

Fresh calvers and high yielding cows are particularly susceptible to metabolic disturbances. Already under the metabolic stress caused by the demands of lactation, a drop in dry matter intake as often seen during hot weather only exacerbates the problem for dairy cows.

Heat stress effects rumen pH in two ways: firstly, DMI is decreased which results in less saliva overall, less salivary buffer flow to the rumen and therefore reduced rumen pH. Secondly, heat stress also brings on slobbering, which means less saliva reaching the rumen and consequently a reduction in rumen pH as buffer salts are lost.

While grazing cows struggling to cope with soaring temperatures outdoors is an obvious cause of heat stress, it shouldn't be forgotten the problem can occur in housing too. Dutch dairy vet Joep Driessen and his VetVice team specialise in CowSignals training, barn design and dairy management; he says it's easy to tell when cows are feeling the heat indoors.

"What do the cows tell you? If you see cows sticking their nose out of the door or window on a hot day, it's not curiosity - it will very likely be fresh air-seeking behaviour. When cows don't have enough fresh air in the building to cool down, often they will eat less, because they cannot cool down.

"In these buildings, you also see cows eating at the ends of the building where there is more fresh air and light coming in. Cows can eat here and cool down at the same time by breathing in dry air," says Mr Driessen.

When cows are given the option to eat from feed tables either inside or running down the outside of a barn (with or without roof coverings), they almost always eat more outside. This is because of the improved light and air; something to factor in when designing a new cow shed.

What you can do to combat heat stress

It should go without saying that plentiful, fresh water should be available at all times. Water intake helps cows cope with heat stress; bear in mind that, while cows can drink at 15 litres per minute, they only drink for about 30 minutes per day, most of it within 60 minutes after milking, so adequate trough numbers, capacity and flow rate are critical.

If cows are showing signs of heat stress indoors (multiple cows breathing 30-60 times per minute, for example), you need to bring more fresh and dry air from outside. This means fans – and the design of your building will determine whether vertical or horizontal fans are the most effective.

When choosing where to site fans, priority starts with the (high heat stress risk) close-up transition cow housing, followed by the holding area immediately prior to milking. This latter is a prime risk area for heat stress, with cattle packed together; then make sure the cow beds are covered.

Getting feeding right

Inevitably, high temperatures depress appetites, leading to more sorting of the ration. To maximise intakes, ensure feed is fresh by feeding out on a regular basis.

There's a temptation in this situation to reduce the overall volume of the diet mix; for example if 100 cows are fed 15kg silage and 5kg blend and they are not eating it all up, the mix is reduced to only feed 80 cows even though there are 100 cows. Because of this, the energy density will drop and performance will also drop.

It is important to monitor silage clamp faces to ensure they don't start heating which will cause decreased intake, feed value and possible mycotoxin. Consider using Fresh Guard to help keep your feed mixes cool.

The message here is simple: if the diet sheet says to feed 5kg blend per head, make sure it does! Instead of reducing volume, look to boost DMI; the addition of molasses and water can help palatability, and targeted use of supplements/additives such as yeasts, and NWF's Stable Rumen Pak are also helpful.

NWF dairy diets include Cell Shield®, a powerful anti-oxidant designed to optimise production and cattle health. Cell Shield® supports and regenerates vitamin E within the cow's system, helping improve immune response, which can help reduce somatic cell counts as well as the risk and severity of mastitis and other infections.

For information on the NWF range of summer dairy feeds and supplements, visit www.nwfagriculture.co.uk



Simple system delivers for Caerphilly father and son team

The Tamplins describe the system at Cwmnofydd Farm as 'very traditional and simple' with grass and maize silage fed out in ring feeders

When Owen Tamplin's son, Thomas, returned from agricultural college full of ideas for the farm, it provided the catalyst for a move back into dairying.

"We had been dairying here at Cwmnofydd up until 1998 but went out of the industry for family reasons and I scaled things back to just sheep for 15 years to focus on my children. When Thomas came back in 2012, it seemed the right time to go back in," says Owen.

"The farm is right on the urban fringe of Caerphilly and only 15 minutes from Cardiff, and we have all the problems associated that: people wandering all over the place since the Right To Roam legislation came in, theft, gates left open and dogs worrying the sheep. We'd built up to 650 breeding ewes but those have now been reduced to 240 and we have 80 milkers plus 50 followers."

Once the decision had been made, father and son started buying in pedigree Holstein heifers from dispersal sales and the Sedgemoor auction centre. Milking began in May 2013 on the 300-acre unit and the herd now has a rolling 305 day average of 9,250 litres at 3.95% butterfat, 3.2% protein.

"We made the decision to go with Holsteins as we wanted the production – modern breeding means there's more focus on fertility and mobility and we are going for the 'middle of the road' type rather than show types. When we started milking the first time around, the cows were doing 6,000 litres; there's no point going back to that," says Owen.

The ration is based on what the Tamplins describe as a 'very traditional and simple' grass and maize silage system, with forage in ring feeders and NWF Pioneer 21 compound in the winter, moving to Milkline 17 in the summer via the parlour. High yielders get an extra allocation of compound at midday to top up.

"Obviously, in a system like ours, we are very reliant on forage quality; last spring was very challenging for making silage and we ended up with some wet, acidic material. In consultation with Luke Thompson, NWF Technical Sales Specialist, we added Acid Buff and YeaSacc to the ration from the start of autumn feeding and it has helped avoid digestive upsets and has improved performance."

Calving is year round with an autumn bias; cows go out as soon as possible in the spring with buffer feed available for high yielders. Dry cows are fed NWF Dry Time pellets plus haylage in the summer, but everything is geared to keeping the system simple, says Owen.

"The sheep, which are Lleyn ewes put to the Charollais, fit in around the cows. They lamb in two blocks in January and early March then utilise the rougher ground no good for the cows in the summer, before tidying the cattle grazing in the autumn and winter.



"The lambs are finished and sold via Monmouthshire market. Having this second enterprise helps balance out milk price dips, and provide cashflow," says Owen, who uses both NWF Classic Ewe nuts and Fast Lamb pellets.

While the current milk price is a concern, the plan at Cwmnofydd remains to push cow numbers up to 90 and then focus on driving up production.

"The system works well – the size of the unit means one of us can be away and the other can manage with the help of our college student, Megan, who comes in three days a week. We can't do anything about the milk price, but we can keep focusing on getting the most from our cows," says Owen.



Pictured Left to right: Tom and Owen Tamplin with NWF Technical Sales Specialist Luke Thompson

NWF RUMEN PAKS

Support the rumen function of your livestock and performance through the year.

STABLE RUMEN PAK

A cost effective way of optimising rumen pH. Contains Yea-Sacc and a blend of buffering agents including Acid Buf.

HEALTHY RUMEN PAK

Contains Yea-Sacc and Mycosorb, formulated to help ensure the conditions in the rumen are maintained at a level to promote high intakes.

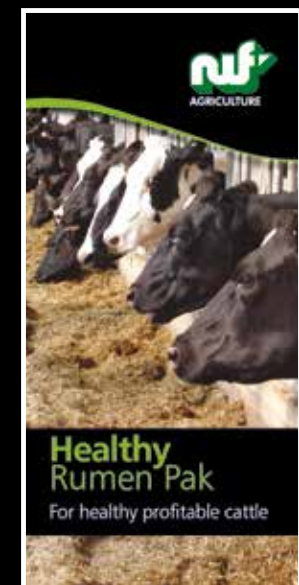
FIBRE GEST FARM PAK

Contains Yea-Sacc to help promote optimal ruminal function and Fibrase to help maximise rumen fermentation. To be used with mature high lignified forages.

MYCO CHALLENGE FARM PAK

An enhanced version of Healthy Rumen Pak that contains Yea-Sacc and higher rate of Mycosorb.

NWF Rumen Paks are available in 25kg packs ideal for mixing in with or sprinkling onto the daily ration.



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Dairy conference puts spotlight on
robotic systems



Over 100 farmers, vets, nutritionists and students recently attended Reaseheath College’s annual dairy conference to learn about the rapid progress of robotic technologies in farm production systems. Rob Fuller, NWF Technical Sales Specialist, shares his insight from the key presentations.

The growth in popularity of robotic milking in the UK has been one you might reasonably describe as steady, but increasing numbers of farmers are considering them – and not just for cows. The Reaseheath conference gave the audience a good insight into both the gains and limitations of automated milking and feeding.

Speakers from across the dairy industry agreed that the use of robotics to standardise production processes had the potential to reduce variation and improve efficiency. This was dependent, however, on the approach of the individual and on the farming systems already in place.

The Dairy Group’s Nigel Hardie, a business consultant specialising in robotic milking systems, told the audience his research had shown milk yield, along with farm profitability, had increased once the cows had the choice to be milked automatically several times a day. He emphasised the importance of high quality stockmanship, including good observation skills as well as the ability to analyse software results for data gathered.

In terms of mastitis control, Mr Hardie said robotic milking allowed beneficial measurements such as milk conductivity and body temperature to be taken. The downside, however, was the lack of human interaction/observation during milking and the inability to treat cows immediately.

On this basis, Mr Hardie pointed out farmers needed to think about alternative holding systems for treating cattle on site. For speaker Anthony Andrews, Sales Manager for GEA Farm Equipment, however, the focus was automated feeding systems.

These systems allow up to eight feeds per day, but can reduce feed costs by up to 5%. Sorting is reduced and DMI increased by 2-5%, said Mr Andrews, who added that this resulted in a 90% feed conversion rate in the rumen.

He also suggested feed table length could be reduced as cows did not all feed at once. However, it should be noted that work done by Jan Hulsen of the Cow Signals Training Company suggests this approach should be treated with caution.

While robotic milking is usually associated with dairy cows, Phil Ormerod, a progressive commercial dairy goat farmer, described the benefits of the system for his 1,100-strong herd. In particular, robotic feeding has reduced waste and helped him run a more efficient and cost effective business.

A TMR of wholecrop and grass silage plus molasses and meal is fed to the goats, which have demonstrated improved feed efficiency on the more consistent ration, as well as reduced competition at the feed fence. The system also uses less energy, saves labour and reduces building cost on the new build site.

Mr Ormerod said these advantages had to be weighed against issues such as a bigger initial depreciation on the system than feeder wagon and the need for staff to be comfortable with the equipment and technology. He admitted that such a system would not suit all situations but said, for him, it had resulted in labour and energy savings.

Reaseheath College is currently looking at installing a robotic system and farm manager Mark Yearsley, a keen supporter, outlined the forecasted cost and return on investment should they choose to install a robot in addition to the current parlour for its high input herd.

Mr Yearsley said that he believed improved staff efficiency would be the most important outcome, as the herd managers would have more time to focus on attention to detail. He also felt there would be a positive effect on rumen health, as the cows would be able to feed little and often.

“I have no doubt that robotics are going to play a big part in next generation farming,” said Mr Yearsley, who believes improved staff efficiency would be the most important outcome.

The conference was chaired by George Fisher, manager of the Reaseheath Agricultural Development Academy, who concluded: “There was a lot of positive but balanced discussion. I hope everyone went away with a better understanding of the technology involved and its place in profitability. We also have to appreciate that whether you choose robotics depends very much on how you want to farm.”



Focus on fertility to **boost margins**

Getting fertility right can have a significant impact on herd profitability. Abbigail England, NWF Technical co-ordinator, looks at why poor fertility is still an issue for UK dairy herds and how to overcome it.

Fertility in the UK dairy herd remains one of the most significant areas of concern. DairyCo estimates that the costs in lost milk production, fewer calves, excessive culling and additional veterinary treatments cost around £25,000/year in the average-performing 100-cow herd, equivalent to over 3.5p/litre.

While the decline in dairy herd fertility is usually assumed to be due to a sustained focus on breeding for milk production, the issue is far more complicated than this. Factors such as infectious diseases (BVD, IBR and Johne’s, for example), management issues (heat detection, dealing with bigger herds), lameness and mineral deficiencies all play a role.

Warning signs that impact on fertility

A drop in milk protein levels falling below 3% should ring alarm bells. Good levels of protein in milk are associated with:

- Good energy status
- Longevity
- Lower culling rate
- Less disease

Illness and disease, however, will cause a cow to retain any spare protein (normally put into milk) and a closer look at individual cows may be necessary to ascertain the cause. Another warning sign is a fall in dry matter intake (DMI). Ideally, cows should be eating 100% of the formulated ration.

When DMI drops off, so does the intake of energy, protein, vitamins and minerals – all key to good fertility. If intakes are reduced, check ration formulation and particle size and ensure rumen function is at optimum levels (products such as NWF Stable Rumen Pak are designed to help with this).

Heat detection

One of the simple but critical aspects of achieving better fertility in the herd is improved heat detection.

Research shows that three, 30-minute heat detection periods

spaced evenly through the day is essential to achieve heat detection efficiency (HDE) of 70%+. This could be at 6am, 2pm and 10pm, for example; when no observations are carried out after 8pm, the HDE drops to 46%.

There is also an impact of milk yield on length of time in oestrus; roughly speaking, the high yielding the cow, the less time she spends in oestrus. For example, cows yielding 24-29 litres spend an average of 14.7 hours in oestrus; this falls to 4.8-2.8hr for those yielding from 44 litres and up.

What this means in effect is that herds where cows are observed for signs of heat every 6hr can identify up to 100% of cows in oestrus at yields of 24 litres, but the same observation schedule can see detection rates drop to 49% for cows yielding 48 litres.

This figure for 48-litre cows falls to 10% detection rate when observations are done only once every 24 hours. These figures are worth taking into consideration when grouping cows by yield.

Be aware, too, that lameness impacts on fertility as it discourages cows from displaying oestrus (see table below).

The impact of lameness on reproductive performance			
Component	Lame Cows	Non-Lame Cows	Difference
Calving to first service interval (days)	72	68	+4
Calving to conception interval (days)	100	86	+14
Pregnancy rate to first service (%)	45.9	56.3	-10.4
Number of services per pregnancy	2.14	1.72	0.42

For advice on the range of NWF products and services designed to target better fertility in your herd, contact your local NWF sales specialist or call us on 0800 756 2787.



Abbigail England





Heifers at grass

As heifers approach service weight and age, getting grass intakes right is critical, says NWF Technical Sales Specialist Laura Young.

At 12 months old, very near service, have your heifers got 35kg of fresh grass in front of them per day? Figures from DairyCo (see table 1) show that a heifer around service weight will require 7.9kg of dry matter intake per day; using current Grass Watch DM figures, this is equivalent to eating 35kg of fresh weight grass.

Also, are your pre-service heifers following your cows around the grazing wedge, or are they receiving some of the best grass on the farm? Hopefully it is the latter: the most efficient, productive growth rates occur pre-service in the animals which are the future of your herd.

Heifer replacements should be grazing as good grass as your milking herd to take advantage of this growth opportunity. Heifers post service (once PD+) can afford to steady up growth rates, and will be your better choice to move to poorer ground.

Table 1. Heifer intakes of good quality grazing for target growth rates (Source: DairyCo)

Rearing period	Calving at 500kg (DMI kg/d)	Calving at 600kg (DMI kg/d)
1.5 – 3 months	2.7	3.1
3 - 6 months	4.2	4.9
6 – 12 months	6.6	7.1
12 – 15 months (bulling)	7.9	8.6
15 – 23 months	9.9	10.5
23 - calving	10.7	11.5

Monitor your heifers

While weighing heifers at grass can be impractical, daily inspection and growth comparison whilst they are all stood together feeding gives a good guide to those which may be behind the desired growth curve. It also gives the opportunity

to ensure animals are not getting fat – the aim is to grow frame (75-80% of which occurs before the animal is 12 months old).

Adding concentrate to the mix

Don't underestimate the value of feeding concentrate to youngstock during the grazing season. Grazed grass can be variable in the level of minerals it provides (for example, magnesium, zinc, copper, iodine and selenium are often in short supply while potassium, iron and molybdenum are often present in high levels) and concentrates can be used to deliver those required.

Poor weather can also mean concentrates are necessary if it is suspected that it has caused DMI to drop off. Remember to inspect grass cover regularly and adjust stocking rates accordingly.

Heifers which are used to receiving concentrates at grass can then be stepped up in terms of energy just prior to bulling. Research shows that increasing energy from two to three pre-service to around six weeks post-service improve conception rates; once the heifer is pregnant, however, she must then be monitored to maintain a healthy weight.

Table 2: Heifer production and fertility performance at a range of calving ages (Source: DairyCo)

Calving age (months)	22-23	24-25	26-28	32-36
Pre-calving weight (kg)	591	621	625	769
Calving Assistance (%)	17%	17%	27%	67%
Weight loss post calving (kg)	32	26	6	59
Cows still alive at 5 years (%)	86%	62%	41%	33%
Total 5 year milk yield (kg)	25,031	20,395	16,671	8,029
Time in milk during first 5 years (%)	48%	42%	38%	18%



Welsh Valley show success

High up on the hill above Caerphilly, with land stretching up to 1,100ft amongst the redundant slag heaps of what was the coal mining centre of south Wales, is 140-acre Tyn-y-cwm Farm, home to the Hillbarn and Jackpot herds of pedigree Holstein cattle. Gareth Watts and his son, Jack, run 100 cows with followers on a simple system that is producing competition-winning cattle.

"Cows are grazed in the summer, and winter feeding is based on grass and maize silage, with most grass silage being made at home, and maize and additional grass silage being bought in. The forage is fed out via ring feeders, with compound in the parlour. The herd is averaging 8,500 litres at the moment," says Gareth.

Despite much of their land being steeply sloping, the Watts maximise output from their 140 acres; around 25 acres are down to short term Italian and Westervold leys used for early grazing before yielding two or three cuts of silage. The rest are long term leys which deliver two cuts of silage or grazing.

"Heifers are generally calved in two batches; one in early summer and the second batch in late autumn, so heifers can be anything from two to two-and-a-half years old at calving. All heifers are bred and reared on farm with a focus on growing them correctly," says Jack.

Calves are weaned at eight to 10 weeks and move from starter pellets onto NWF Super Rearer 18, supplied by NWF Technical Sales Specialist Luke Thompson, plus good quality straw, fed to appetite. Depending on availability, haylage may replace the straw as the heifers get closer to bulling age.

"This is flexible depending on what is available and building space. There's pressure on both so we go with what works," says Gareth.

The herd regularly enters the Monmouthshire Herd Competition, and has been fortunate to have considerable success, winning Champion Herd on Inspection three times in the past four years. Most recently, in the 2014 competition, in addition to being

First Herd on Inspection, the Watts' also took first place in the Champion Heifer class with Hillbarn Shottle Deva 7 (pictured below), first with cow progeny with the Ivy family, and also first in the team of three cows (purchased and homebred).

In addition to the herd competition, Jack has enjoyed considerable show ring success, after getting involved with showing cattle while on placement with the Seaton family, in Shropshire. Starting with local shows, just four years ago, he now regularly shows at national events, including the Welsh Dairy Show, Celtic Dairy Showcase, and the National Calf Show.

Results including Reserve Junior Champion two years' running at the Celtic Dairy Showcase with Hillbarn Sublimity Fillpail 32 and Hillbarn Shottle Roxy 10, as well as 2nd and 5th at the National Calf show 2014 with Hillbarn Goldfish Rose 7 and Jackpot Fever Dawnette, respectively.

There is a strong emphasis on cow families at Hillbarn and Jackpot, with old established families of Fiona, Cross Stitch, Fillpail, and Jasmine featuring heavily. More recently, selective purchases have introduced Roxy, August, Ivy, and Farah families.

Embryos have also played a role in the breeding program with some exciting prospects being Sally from Styche Holsteins, Dawnette from Hodgelyn Holsteins (Canada), and Mist from Heather Holme (Canada). Bulls are selected for type with the current sires being Crackholm Fever and Regancrest Altaiota, as well as older bulls, Comestar Outside and Picston Shottle.

"If the bull is good enough, use it," says Jack.





Strong commercial focus

A strong focus on commercial performance at Tim Jones' Grange Farm near Shrewsbury has seen a move away from suckler cows in the past 12 months in favour of concentrating solely on finishing beef. The 880-acre business, split over two units, carries around 400 head of cattle as well as 1,000 Suffolk cross breeding ewes and followers, with 350 acres of wheat and barley producing feed for the livestock and sale.

"The suckler herd just wasn't profitable for us; while the calves from the sucklers were achieving around £300 more per head finished, that wasn't enough to justify running the cows year round. We're down to just four cows now and they would have gone but for being on TB shutdown – that was another factor: all the TB reactors came from the suckler herd," says Mr Jones.

Beef animals are brought in both as 10-day old calves still on the milk machine and as stores at 16-22 months. Everything goes deadweight to ABP.

"All our calves come direct from farm with some stores coming via a dealer. They stay on the milk machine for 42 day before being weaned – I'm looking for them to do on 1.5 bags," says Tim, who feeds NWF Ultra Milk Blue powder.

"We buy in a mix of Continentals and black and white calves – whatever we can get really – but it's increasingly difficult to get the quality beef crosses out of dairy herds. We take steers, bulls and heifers, with bulls going onto an intensive finishing system.

"The others go onto ad lib homegrown grass and maize silage, with a homemix of wheat, barley, NWF protein pellets, beet pulp, cod liver oil, molasses, YeaSacc and bicarb. We look to sell all year round and having a mix of batches bought in as calves or as stores helps balance returns."

Feeding predominantly homegrown means it is easier to keep a tight rein on input costs, but close attention to detail is applied to every aspect of management. NWF sales specialist John Allcock says whether it is making better quality silage and avoiding wastage in the clamp by using the new NWF Sila-Guard 40 Quattro inoculant, or ensuring FYM is used to

optimise soil structure and fertility, Tim's approach is all about maximising returns.

"He aims for a minimum of 1kg a day of liveweight gain averaged over the animal's lifetime. Everything is weighed regularly to see how they are progressing, as well as being assessed by touch in the crush," says John.

The level of focus also means any animals not performing are quickly identified and sent to slaughter.

"If there's a heifer whose growth rate drops off and keeps doing so, she's sent off because there's no point pushing more corn into her. For us, it's all about weight – we're aiming for 300kg dead for the bulls, 320 kg for the heifers and 350kg for the steers," says Tim.

This applies equally to the sheep enterprise. Lambing percentage runs at 180-200% with a high level of triplets, as the hill flock benefits from coming down onto silage aftermaths.

Triplets are removed and reared as cade lambs, with six weeks on the milk machine and then creep to finish. The rest are home-produced on grass.

"The sheep are fed cracked barley, beet pulp and a high quality NWF protein pellet to make a 16% protein finished feed.

"We're looking to get the lambs, which are all from the Charollais tup, to 40kg liveweight, 20-21kg dead. Last year, we had cade lambs going off at 41kg at nine weeks old, which was not bad," Tim says, with a smile.

Questions from the calf shed

With NWF ruminant sales specialist Sue Bryan

Q: Is the expense of calf milk replacer really worth it when I could use whole milk from the dairy herd?

A: When considering the debate of whole milk vs calf milk replacer (CMR), it always comes back to one fundamental question: which does the better job of optimising the three key factors of health, performance and convenience?

Inevitably, whole milk is still considered the most natural and nutritious choice for rearing calves; that is what it is designed for, after all. Whole milk has qualities that have yet to be replaced entirely by milk replacers.

But just as there are a whole range of CMRs, from those based on milk proteins to those based on soy or modified wheat proteins, to high and low fat alternatives, so there are different types of whole milk beyond that suckled direct from the cow.

Many times, farms look to utilise milk which is otherwise unusable/unsaleable; this might include colostrum, milk contaminated with antibiotics or milk from cows with high SCCs. Otherwise, the choice is between raw or pasteurised bulk milk available for whatever to the calf rearing unit.

Whatever you choose, the health and performance of the calf must be paramount. It's now recognised that restricted feeding of pre-weaned calves is associated with higher mortality rates; calves on restricted feeding do not always exhibit compensatory growth afterwards either.

The LifeStart programme is based on the premise of accelerated growth to 10 weeks of age, capitalising on the calf's potential for lean growth by substantially increasing protein in the diet. These calves then go on to have a lower morbidity and mortality rates, and a higher first lactation milk yield.

COMPARISON OF RESTRICTED FEEDING AND ACCELERATED GROW PROGRAMMES USING CMR

Program	CP/Fat (%)	Feed Rate (DMI)	Target ADG	Weight at Weaning	Age Weaned
Restricted	22/18	500 – 600g	550g/day	1.85 x birthweight	63 days
Accelerated	22/18	900 – 1200g	800g/day	2.25 x birthweight	63 days

Source: Trouw Nutrition 2015

With this in mind, it's easy to see how critical consistent nutritional supply is to the calf up to 10 weeks old. This is where CMRs can win out over whole milk, which can have a fluctuating composition especially where farms are using mastitis milk.

Even whole milk which would be otherwise saleable can sometimes not meet the required nutrient content. The composition of milk has evolved over time as a function of breeding, and in some cases can be deficient in vitamins A, D3, E and B1, as well as trace minerals.

While whole milk is a source of 100% dairy protein, rich in energy and containing immunoglobulins not present in CMRs, it is also potentially a source of disease and pathogens. Feeding antibiotic waste milk also contributes to resistance.

When it comes to the future of your herd, it doesn't pay to gamble with growth rates and health. A good quality calf milk replacer like NWF Ultra Milk Blue, specially formulated for bucket systems and machines not requiring free-flow powder, gives peace of mind. Ultra Milk Blue contains Protimax, an egg powder rich in specific proteins; Nuklospray, a special co-spray dried complex of pre-digested proteins and natural digestibility enhancers to improve fat utilisation and absorption.

To request a FREE leaflet and prices for NWF calf milk replacers call 0800 756 2787 or contact your local NWF sales specialist.



Sue Bryan





Atlantic crossing for Piemontese

Piemontese cattle have been finished at Wallstone Farm in Derbyshire since 2009 by the Matkin family. They exhibited cattle at the recent Beef Expo event, supported by NWF, where visitors had the opportunity to hear more about the excellent fleshing and carcass conformation characteristics of this beef breed.

"We wanted a breed suited to the demands of the deadweight market and the Piemontese seemed to have more of the right traits. Following a trip to the National show of Piemontese in Italy, the first animals soon arrived on farm," says Craig Matkin.

"We found we could take the bulls to a lower liveweight but still get carcasses of 415kg from a 750kg animal. That meant a saving in the amount of feed required."

Stock are sold deadweight through ABP with pure bulls reaching 600kg at 12 months and the cross bred bulls closer to 700kg. The bulls are fed a diet of NWF's Super Grower + Yea Sacc, a 15% beef nut, and barley straw.

The Matkins have recently begun supplying semen from their breeding bull Ithersay Uberto via an American AI company, with over 500 straws already ordered.

YOUNG FARMERS... ASK YOURSELF



A serious head or spinal injury could put an end to your career or livelihood as a farmer. What would happen then?

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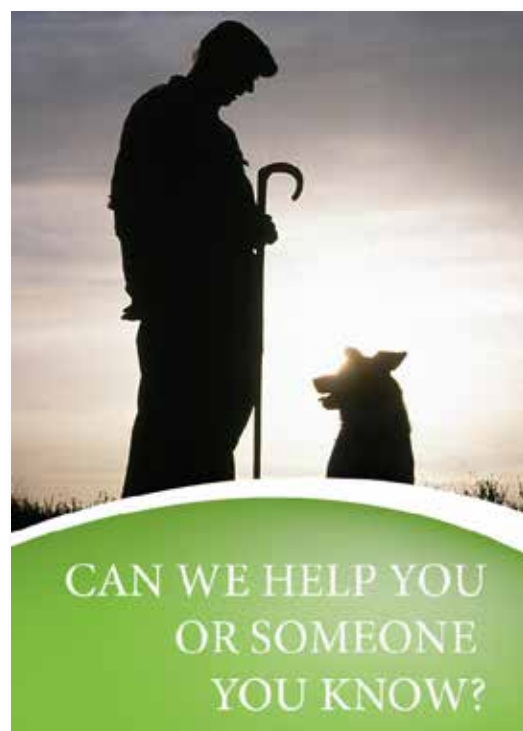
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A HELPING HAND

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