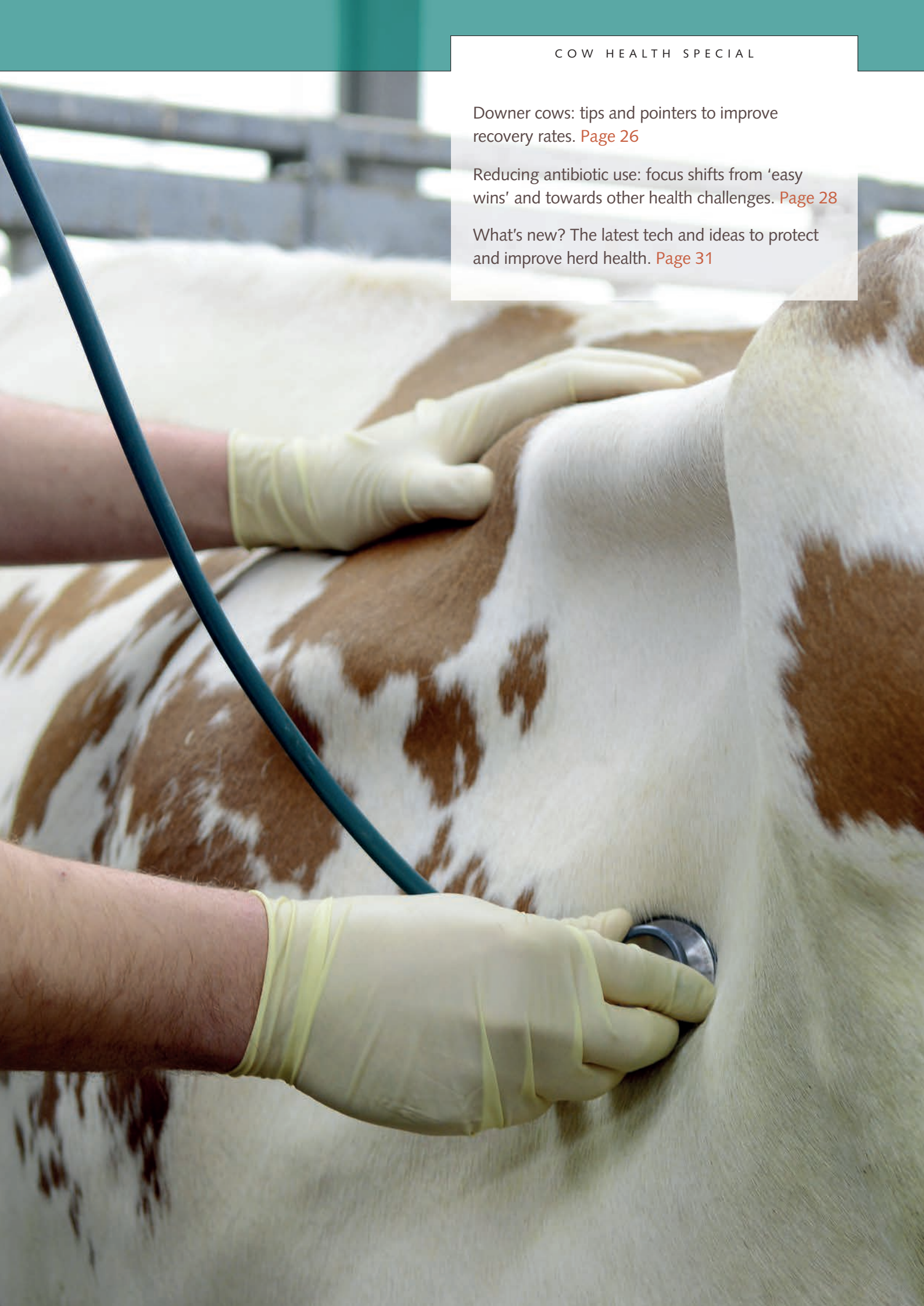


‘Gold-standard’ care for downer cows is key to successful treatment

Up you go, girl!

With autumn and winter calving in full swing on many units, we ask a leading dairy vet for some timely tips on treating and managing downer cows. Recent research highlights ‘best practice’ to get them firmly on the road to a full recovery.

text **Rachael Porter**

‘Gold-standard’ care is vital to downer cow recovery – not least because it helps to prevent ‘secondary damage’. That was just one of the findings of a study, carried out by Australian vets Phil Poulton and Michael Pyman, who presented the results at the recent British Cattle Veterinary Association conference in Edinburgh.

“Downer cows can be difficult and, often, unrewarding to treat,” explains Dr Poulton, a practicing vet from Tarwin Veterinary Group, based in Victoria.

“Cows go ‘down’ for many different reasons and when producers and vets are confronted with a ‘recumbent’ dairy cow, how she is treated and managed will depend upon the specifics of the case.

“A positive outcome depends on having a comprehensive approach. This includes a thorough clinical examination to ensure the correct diagnosis is made, appropriate and timely treatment of the specific condition or euthanasia if the prognosis is poor, and high-quality nursing care.

“There is a wide variety of primary reasons for cows to go down and, once down, there’s also risk of secondary damage – to nerves and/or muscles – or joint dislocation,” says Dr Poulton. “So it’s important that producers and vets examine downer cows thoroughly, looking for both the primary and secondary problems.”

Australian research

The study, which looked at 218 downer cows from 96 Australian herds, revealed that the main initial causes of cows going down were calving paralysis (45% of cows), back injury (19%) and milk fever (12%).

“This initial reason for them going down did not affect their recovery,” says Dr Poulton. “What was more important was that 84% of the downer cows had some sort of secondary damage, such as muscle or nerve damage, caused by lying for prolonged periods on hard surfaces. This was a critical factor in whether

Top tips for downer-cow management

- Give downer cows appropriate and prompt treatment for their specific condition. The longer the cow stays down, the greater the chance of secondary damage developing and the smaller her chance of recovery. If the cow is not up within six hours, she must be examined by a vet.
- Give downer cows a thorough clinical examination to check for complicating issues.
- Use NSAIDs – their anti-inflammatory properties are just as important as pain relief.
- Gold-standard nursing care is key to getting cows back on their feet. Make sure that there is free access to fresh feed and water, a soft grip surface such as deep straw, and turn the cow regularly – from one side to another.
- Prevention is better than cure. So control milk fever and ensure that cows have appropriate assistance at calving to help stop them going down in the first place.

these downer cows got back up again. "If there was no evidence of secondary damage, 57% of downer cows got back up again."

That said, just 14% of downer cows with secondary damage got back up and this is why the care of downer cows is so vital to success. It's very much about preventing that 'secondary' damage from occurring."

Secondary damage

The research identified several common types of secondary damage, which should always be considered when downer cows are examined.

One is compartment syndrome where pressure damage mainly affects the hamstring group of muscles. It is a typical complication in downer cows. It can be assessed by measuring Creatinine Phosphokinase (CK) via blood sampling. If the levels are above a critical threshold, which is time dependent, there is less than a 5% chance of survival.

Secondary neuropathies, particularly to the sciatic nerve and its branches, can also occur if downer cows are nursed on hard surfaces. And femoral nerve damage can occur when cows try to crawl while recumbent. If the hind legs move into the 'frog-leg' position then the back hyper-extends and this can strain the lumbar plexus, which causes damage to the femoral nerve roots.

Ventral dislocated hips are also a risk to recumbent cows, particularly if they have other damage to their hind limbs, such as calving paralysis. So hips should always be assessed when examining downer cows.

Forelimb neuropathies, either brachial plexus paralysis or radial nerve damage, are a risk if downer cows lie on their side for a long period of time, particularly on hard surfaces. This can cause pressure damage to the nerves.

Cows lying on their side are also at risk of aspirating, which can cause pneumonia or death. And cows nursed in paddocks in cold weather can suffer from exposure.

Producers and vets should also check for 'bed' or pressure sores and lifting damage, which can be found in cows nursed for extended periods, particularly if their management has not been ideal.

Optimum care

The study also looked at the level of 'nursing' provided to the cows. Optimum care included providing deep and soft bedding material, protection from adverse weather, turning cows from one side to another several times daily, access to good quality feed and water, and lifting cows only if it will be 'effective' and if the cow will then be supervised.

"If care was deemed to be 'decent' – if more than half of recommendations outlined were followed – then 43% of these cows recovered. But if care was 'unsatisfactory' then only 6% of these cows got back up again," says Dr Poulton.

He adds that, from a cow welfare perspective, prompt and timely decisions on euthanasia are an important part of the approach to improving the outcome for recumbent dairy cows.

"Some cows just won't recover and it's important that they're not allowed to suffer."

And equally important is preventing cows from becoming recumbent in the first place.

"Preventative measures to reduce the risks of downer cows should be a high priority for producers.

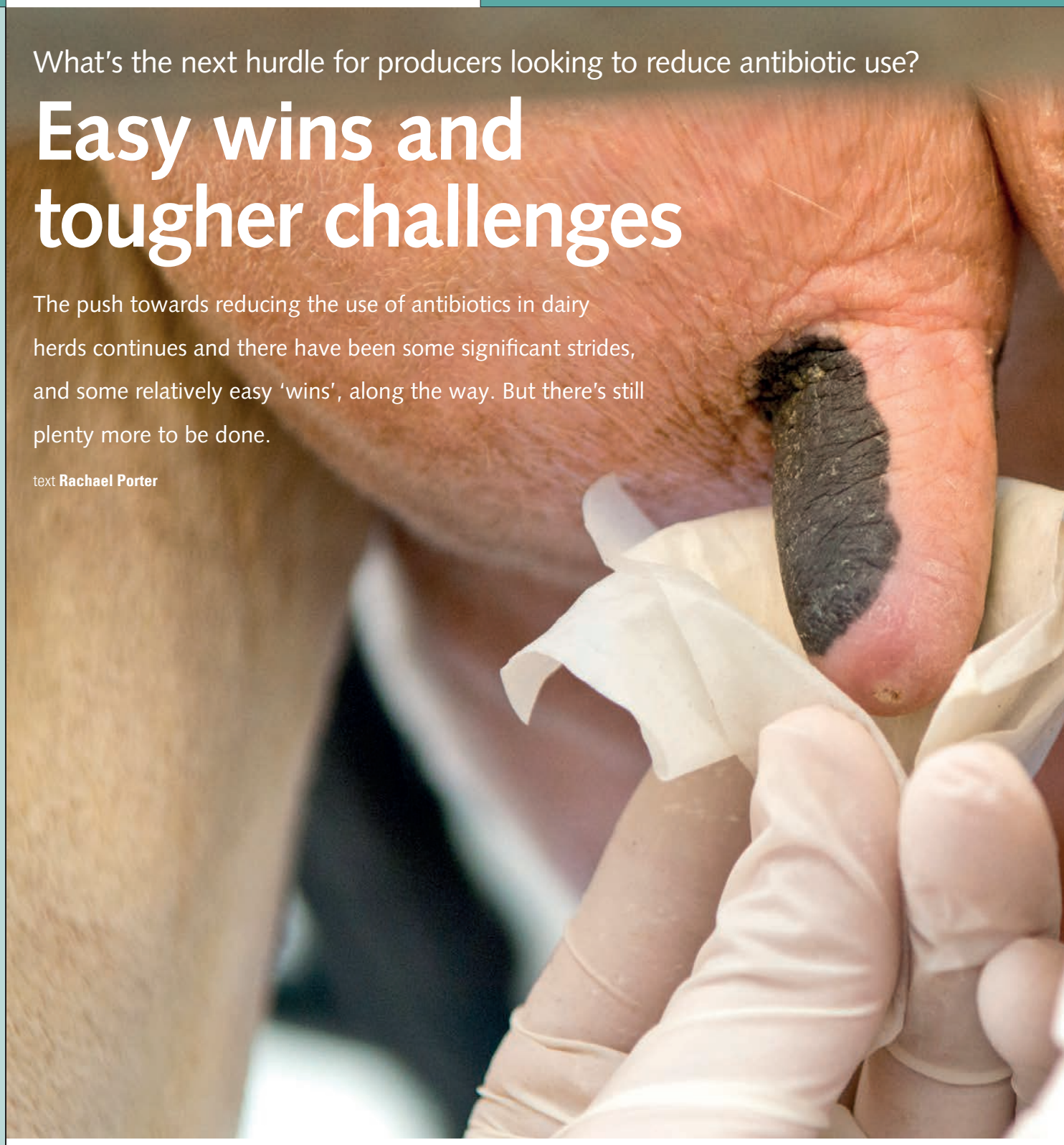
"Discussion with your vet about how to prevent and control milk fever, for example, are much more pro-active than time spent devising care plans and protocols for managing recumbent cows." |

What's the next hurdle for producers looking to reduce antibiotic use?

Easy wins and tougher challenges

The push towards reducing the use of antibiotics in dairy herds continues and there have been some significant strides, and some relatively easy 'wins', along the way. But there's still plenty more to be done.

text **Rachael Porter**



The focus on reducing antibiotic use is now moving beyond adopting selective dry cow therapy, according to Exeter-based Kite Consulting's vet Duncan Williams.

"There are producers out there who are using dry cow therapy on a small percentage of their herd – some are using it on less than half of their milking herd at drying off.

The move away from blanket use of dry cow therapy towards a selective approach is still gathering pace. Selective dry cow therapy (DCT) will reduce the dairy industry's usage by between 1mg and 2mg per population correction unit (PCU) – a measure used by the government to standardise usage for the sector. And, overall, RUMA figures show that the UK hit its 2018 target, to reduce antibiotic use by 50%, two years early. The new target is another 50% reduction by 2020. Mr Williams stresses that there's more to do. "For the dairy industry, adopting selective DCT is just the tip of the iceberg."

That said, it's not been easy to cut usage? "This move away from blanket use has required a change of mindset by processors – who should take some recognition for the progress that's been made – as well as vets and producers, pushing many out of their comfort zone. Arla has been at the forefront here, helping and encouraging producers to opt for selective use, where appropriate.

Duncan Williams: "The ball is rolling fast and the industry has to stay ahead of it"

"Some Arla suppliers are yet to take the plunge, but the co-op has certainly started a lot of conversations, about how they can adopt this approach and look at other areas too where they could reduce antibiotic use."

And that's what's key here – moving antibiotics per se to the top of the agenda and increasing awareness. Producers are familiar with the concept of selective DCT, even if they're yet to move in that direction.

"You can now have a conversation about reducing overall antibiotic use. There has been a change of mindset and the challenge now is to encourage producers to continue along that road and look at other areas where health improvements, and therefore antibiotic use reductions, can be made," says Mr Williams.

He adds that it's best to start with what he calls 'low hanging fruit' – easy pickings. "This will vary from herd to herd, but units with obvious mastitis, metritis and lameness problems, for example, can target these areas with more proactive and preventative management. The key is to prevent disease so the need for treatment is reduced. This requires good husbandry and farm records, as well as a focus on nutrition and environmental management.

Updating protocols and making sure that management is as good as it can be, with the whole dairy team on board, is essential. This team should include the vet, nutritionist, all staff, consultants – anyone who is involved in the day-to-day running of the herd.

"The ball is rolling fast and it's important that the industry stays ahead of it – and in control. For that reason, some vet practices have already stopped using third and fourth generation cephalosporin and fluoroquinolone antibiotics. These have been identified by government health bodies as being critically important to protect. And the industry needs to act responsibly, in a bid to safeguard the efficacy of these antimicrobials."

Mr Williams adds that other countries, which began reducing antibiotic use before the UK, made a lot of progress during the first couple of years but things then slowed down significantly. Maintaining momentum is important.

"The UK is still in the early phase and there are plenty of 'easy wins' to be had and strong impacts to make on both animal health and antibiotic use. But I think that more monitoring is needed. This will result in a more co-ordinated approach, particularly as the easy wins fall away and reducing antibiotic use becomes more and more difficult.

"But it also allows vets and producers to see what's actually working –

Using selective dry cow therapy – do's and don'ts

One Shropshire-based producer has reduced dry cow therapy use on his 350-cow spring-block-calving herd to just 8%. But it wasn't an easy transition. "It's certainly easier, I think, to do because we're drying off all the cows at the same time, says Danny Wragg. "It's a planned job that takes all day and we now have strict protocols and selection criteria that we adhere to."

The whole herd is dried off on December 1, when cows are giving fewer than 12 litres a day.

"That's the key. If cows are giving too much milk then it can be disastrous. And I should know. I tried it three years ago. Let's just say, it was a steep learning curve."

False economy

Looking back, Danny knows he made a lot of mistakes. But he also learnt from them. He first adopted selective dry cow therapy (DCT) in autumn 2014 and he admits that saving money was his motivation.

"Milk price had hit rock bottom for us at just 13ppl and we were desperate to cut costs wherever we could. And I think that was our first mistake."

That year, DCT was used on just 50% of the herd – any cows that had mastitis during that lactation, cows with teat-end damage and older cows (four or more lactations). "We didn't consider individual somatic cell counts as we weren't milk recording then. And we didn't consider daily milk yield at drying off either."

Suffice to say that there was a cost saving – around £2,000 across the whole herd due to less DCT being used. But it wasn't cost effective, because some cows developed udder problems during the dry period and in early lactation.

Much changed after that first attempt at using DCT selectively and in 2015 individual cow somatic cell counts (SCCs) were a big factor in Danny's decision-making process at drying off. DCT was used on 15% of the herd that year. "We still tubed cows that had had mastitis and any with teat end damage, but SCC was the big difference. We started milk recording with NMR in 2015, so we had individual SCCs for each cow. And any cows with a score of more than 200,000 cells/ml were given DCT."

He also takes steps to 'turn off' milk production in the run up to drying off the herd. "I think, for us, that's been the most important single factor in making sure that selective DCT works for our herd. It's the only way to avoid milk leakage during the dry period. Not good when you've used DCT and a disaster if you've only administered a teat sealant."

The process of drying off itself also must be 'top notch', according to Danny. "There's no room for cutting corners. It has to be done carefully and correctly – and with plenty of planning."

Preparation plans

He clips cows' tails a month before drying off, to help keep udders clean, and they're trimmed again during the dry-cow period, again to improve hygiene. Feeding is also 'wound down' towards the end of lactation, so cows are giving less than 12 litres a day at drying off. "More than that and we see problems with milk leakage. Whether we use DCT, teat sealant or both, we want them to stay in the udder and for the teat to remain sealed."

He says that teat condition is also vital to keeping udders healthy and he is liberal (10 litres per cow per year) with his use of

Danny Wragg: "There's no room for cutting corners when using DCT selectively"

a high-emollient teat spray, which he uses after every milking. "And we typically see fewer than 20 cases of mastitis a year, which is helped by good teat condition."

The drying off process itself sees surgical spirit used to clean teats before treatments are administered. And gloves are worn. "We keep the cow, the environment and ourselves scrupulously clean during the drying off process. It's all about ensuring that we don't introduce infection to the cow's udder."

He also stresses that it's vital to keep checking the cows daily for up to two weeks after drying off, to make sure that udders are healthy.

In 2016, the third year of selective DCT use, Danny tubed just 8% of the herd, with the remaining 92% getting just a teat sealant. "We stuck to the same parameters as in 2015. And I think key to our success is running a very low herd average SCC score. Our average is less than 100,000 cells/ml for the whole year. For us, a big spike is up to 150,000 cells/ml and our herd average SCC is 80,000 cells/ml at the moment. We're very pleased with that, obviously. And it also allows us to continue to use DCT selectively, keeping the cost and use of antibiotics to a minimum."

what's making a difference on farm and reducing the requirement for antibiotic use."

He can see a time when vets submit antibiotic sales directly to a central database, as they are in Denmark and Norway.

"That would be the 'gold standard' so to speak – something to aspire to. It would require a lot of co-ordination, but I'd like to see it happen here."

"The difficulty here in the UK is that there are many different antibiotic monitoring systems in use and so it would need to be uniform and simple. But it does need to be done and I believe, during the next couple of years, that it could happen.

"It will be extremely powerful information when it's all collected. And it will be just what's needed to help processors, vets and producers take the next steps to reduce antibiotic use.

"If we collaborate as an industry, we will avoid changes in legislation that will force our hands." |

Update on health monitoring and rumen pH reminder

Latest tech and advice

We look at a sensor, developed to keep a close eye on young stock health, and the importance of optimising rumen pH.

text **Rachael Porter**

① Remote health monitoring

Producers will soon be able to weigh young stock and monitor their temperature, several times a day, without having to lift a finger.

A project, which should be available on farms within the next three years, brings together the latest technology to remotely weigh and record data on calves and young stock throughout the rearing period.

"Not only will this help producers to fine-tune their management to maximise performance, it will also enable them to identify sick animals at an early stage, improving recovery speeds and reducing the use of antibiotics," explains Alan Beynon, director of PrognostiX – the company that is developing the technology.

Working with Nottingham University and British Telecom (BT), the development team expects that the smart solution, called Y-Ware, to have far-reaching benefits for the industry – from practical farm improvements to retailer traceability.

"By inserting a small bolus into the calf's rumen, and combining it with long-distance LoRa wireless technology, we can pull together all the data in one place," explains Mr Beynon. "With identification capability, it offers similar benefits to electronic ear tags but with far more data recording and the bonus of being completely tamper-proof."

PrognostiX is developing the bolus and wireless weighing platform. BT is working on the software, and Nottingham University is focusing on the algorithms to turn statistics into meaningful alerts for producers. "The idea is to locate the weighing platform by a water trough –inside or outside," explains Mr Beynon.

"Each animal will then be weighed every time it drinks, and the information – along with its temperature – will be processed by the Edge hub before it is sent wirelessly to the producer's computer or mobile device."

By developing unique Edge technology to process data at the point of collection, the system only sends alerts when needed – when an animal has a temperature, for example. This saves on battery usage and minimises the data package required.

② Rumen pH for cow health

Several health conditions in cows are caused by a level of production that's inconsistent with nutrient intake and understanding the cow's rumen function is key to preventing this. So says Bio-Energy Ingredients' Nigel Storer.

"Cows that are in a negative energy balance in early lactation, or suffering from either clinical or sub-clinical hypocalcaemia, will have reduced immune function and struggle through this transition period," Mr Storer says. "By providing better nutrition, a significant improvement can be made to herd health with major financial benefits.

"To achieve this, we have to look at the needs of the cow. We mustn't just focus on the energy that we provide in the ration – we must look at how much of that energy the cow is able to utilise. This will make significant improvements in animal health and performance.

"Maintaining optimal rumen pH will lead to the diet providing effective energy – energy that the cow can use for health and production."

He urges producers to consider adding Glycal Forte to their rations – a source of by-pass energy, a rumen pH regulator and a source of bio-available calcium.

"There are many benefits to managing rumen pH. Improvements in immune system function, reduced metabolic disorders, and better fertility efficiency will all result from the cows spending less time in a negative energy balance."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