Livestock matters

ISSUE 50
SPRING 2019

Vaccines explained

How to get the best results from vaccination programmes

Improving herd biosecurity

Joining a bTB accreditation scheme to reduce TB testing frequency

Colostrum management

New colostrum protocol is first step to reducing pneumonia incidence

Herd fertility

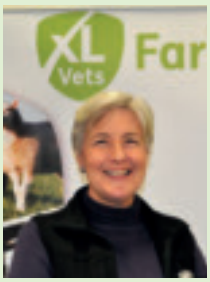
Bolus resolves mineral deficiencies and restores performance

Johne's disease eradication

Reducing environmental challenge is an essential part of the strategy

XL Vets Farm

Welcome to the Spring issue of Livestock Matters



Rachel Queenborough

the editor

Kicking off this issue, there's a 4–page feature on vaccines and vaccination programmes, and the key factors impacting on their efficacy and effectiveness. Vets – Andy Cant in the Orkney Islands, Paul Kirkwood in Cumbria and Miranda Macinnes in Cornwall, give their advice on how to ensure the best results.

But vaccination is not a silver bullet, as Piers Pepperell of Mount Vets points out: a good vaccination protocol will not fix a poor colostrum protocol. On one Somerset dairy farm, simply improving colostrum management significantly reduced cases of calf pneumonia.

And in the eradication of Johne's disease in cattle, vet Graeme Richardson of Thrums Veterinary Group advocates testing and culling, reducing environmental challenges …..and not vaccinating.

As for bovine TB, strict biosecurity is the key to disease prevention. Vet Rhian Rochford of Friars Moor Livestock Health highlights some practical measures which can be taken to protect herds from contact with TB–infected wildlife.

We hope you enjoy this issue of Livestock Matters.

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18 Instigating a colostrum protocol was first step to reducing pneumonia

Before starting up a calf vaccination programme for dairy farmer Sam Tucker, Piers Pepperell of Mount Vets first advised an improved routine for colostrum management.

New targets for the top dairy farms

Dairy farmers can now benchmark themselves against the top five percent of farms following an update to AHDB Dairy's key performance indicators (KPIs.)

The addition of this new category to the existing bands for the top 25% and industry average farms enables farmers to see how they compare with others and identify areas for improvement.

The KPIs have also been refreshed using the latest available data and include changes to the definitions and calculations following discussions with farmers and industry consultants.

Launched in 2017, the KPIs form part of AHDB's optimal dairy systems programme, which is encouraging farmers to focus on either all year round or block calving.

There are six physical KPIs for each calving system and three financial measures, which are applicable to both.

All year round calving KPIs:

- Pregnancy rate (%)
- Age at first calving (months)
- Total purchased feed costs (ppl)
- Average daily lifetime yield (litres/day)
- Overheads (excluding rent and finance) (ppl)
- Genetic merit

Block calving KPIs:

- Cows & heifers calved within the first 6 weeks (%)
- Herd replacement rate (%)
- Milk solids output per hectare (kg MS/ha)
- Milk yield from forage (litres) and (solids)
- Overheads (excluding rent and finance) (ppl)
- Genetic merit

Financial KPIs:

- Full economic costs of production (ppl)
- Return on tenants–type capital (%)
- Full economic net margin (ppl)

Farmers can attend meetings at one of AHDB's seven strategic dairy farms, which as well as covering key topics relevant to each system, openly share the farm's figures against the KPIs to help understand what can be achieved.

A full set of definitions along with guidance about how to calculate each measure can be found on their website – dairy.ahdb.org.uk – alongside an online calculator where farmers can enter their own figures to see how they compare.

XLVets at shows and events

In February, XLVets was one of 290 exhibitors at Dairy–Tech, the relatively new business–focussed dairy event organised by the RABDF and held at Stoneleigh Park.

Visitors to the XLVets stand had the opportunity to find out more about the range of FarmSkills courses being run, discuss any animal health queries they had, or just enjoy catching up informally with their vet.

This year, XLVets will also be attending North Sheep, near Settle on 5th June, Beef Expo at Kendal on 23rd May, UK Dairy Day in Telford on 11th September, and AgriScot in Edinburgh on 20th November.

Dairy sheep and goat conference held

XLVets practice Friars Moor Livestock Health has held its fourth annual Dairy Sheep and Goat Conference, with the theme: Challenges – old and new.

The two–day conference was held in February at a Bristol hotel. It attracted speakers and delegates from around the world including Canada, North America, Israel, The Netherlands and even New Zealand.

Lucy Hepworth

Friars Moor vet Lucy Hepworth explains: "In our Dorset practice we have a number of clients who are milking sheep and goats. For these producers, there is often little information or research available specifically on their types of enterprise.

"So we set up a consultancy within the practice to support them. There were no shows or conferences that focussed on small ruminant dairying, so the first conference we held was in response to that. Now we are making it an annual event.

"The conference programmes are designed to appeal not just to farmers but also vets and the trade. Topics and presenters are chosen carefully. We are finding that not only can farmers learn from vets, but vets can add to their knowledge from listening to producers sharing their experiences."

Challenges

The sessions in this year's conference looked at the 'old challenges' of identifying production–limiting diseases like Johne's disease, Maedi Visna and CAE, and the value of entering into eradication programmes. Also covered was mastitis, while clinical cases are often the focus for vets and farmers, the impact of sub–clinical mastitis on production was also reviewed.

Lucy adds: "There are some new challenges for these old diseases – we need to account for antibiotic usage and find ways to reduce their use through disease prevention and management. Perspectives from dairy cow and conventional sheep systems were given, respectively, by our Friars Moor colleague Jenny Bellini and Synergy Farm Health's Emily Gascoigne."

Some practical sessions were also included in the conference, attendees had the option to join an artisan cheese–making workshop on the first morning. The other workshop session on offer was 'practical coccidiosis control' run by Lucy Hepworth and fellow Friars Moor vet Jo Child. This session presented two scenarios commonly seen on farm for participants to work through, before feeding back to the rest of the group and sharing ideas.

Details of next year's Dairy Sheep and Goat Consultancy's conference will be announced later this year. Farmers can look out for news on the website: dairysheepandgoat.com.

Vaccines: how to get the best results from a vaccination programme

Vaccines can sometimes get a bad name for 'not working'. But the efficacy of a vaccine in controlling a disease is dependent on a range of practical factors, many of which are farm–based and controllable.

To get the best results, vaccines need to be used as part of a programme which also includes attention to biosecurity, and the animal's health, management and environment.

Here, vet Paul Kirkwood of Paragon Veterinary Group outlines the different types of vaccine and gives some practical advice on ensuring they deliver the desired disease protection. Vet Andy Cant of Northvet Veterinary Group explains why vets may advise vaccination as an insurance policy.

Paul Kirkwood
Paragon Vets

Mode of action

Paul explains: "All vaccines work on the principle that when an animal encounters a pathogen – such as a virus or bacterium – its body mounts an immune response and produces antibodies to fight the infection from that specific pathogen.

"However, if the immune system of an animal is compromised, it will not be able to mount a good immune response, or it may take longer to generate enough antibodies to achieve an adequate protection level.

"One of the first criteria for success is that animals need to be in good health before they are vaccinated. Good management, nutrition and husbandry all play a role in this. If an animal to be vaccinated is judged to be ill, then it should be treated prior to vaccinating."

Live vs killed vaccines

Vaccine products may be 'live' or 'killed' – sometimes referred to as 'dead' or 'inactivated'.

Paul explains: "Live vaccines contain an attenuated form of the causative pathogen, and this damped down state will confer long immunity in the animal after a single dose. After being vaccinated, it takes the animal roughly 10–14 days to mount an immune response and become fully primed against that pathogen.

Andy Cant
Northvet Veterinary Group

"However, 'killed' vaccines require two administrations to stimulate sufficient antibody response in the animal. Typically, a gap of 2–6 weeks between doses will be specified in the product data sheet. Animals will not be fully protected until 10–14 days after the second dose.

Boosters

"Over time, the antibodies initially raised to a killed vaccine will gradually decline. So booster doses will be needed to maintain effective immunity.

"In cattle, boosters for BVD are annual. For IBR, where herds have a high level of exposure to the virus, then vaccination will be needed every 6 months. In high risk herds, vaccination is needed at 5 monthly intervals to prevent clinical signs developing.

"In sheep, preventing clostridial disease requires an annual booster. For footrot vaccinations, the frequency will depend on the challenge – typically they are 6–monthly for the first few years, before dropping to an annual booster just before the period of greatest risk in late autumn.

"Allowing the booster to lapse or forgetting to treat all animals in a herd or flock, are reasons why some vaccination programmes may seem to have 'failed'," says Paul.

Marker vaccines

"With conventional vaccines, once an animal has been vaccinated, it will have antibodies to the virus and it won't be possible to tell if it has been infected or just vaccinated – or both," explains Paul.

"However, the chemistry of a marker vaccine enables the antibodies raised to it to be differentiated from the natural antibody response to the virus.

"The only marker vaccine available in the livestock sector is for IBR in cattle. Use of this vaccine enables farmers to market their cattle as being IBR–free while still vaccinating to protect their herd against biosecurity breakdowns."

Importance of timing

Paul advises: "Being proactive is key to any vaccination programme. For instance, to protect youngstock from exposure to lungworm at turnout, the full vaccine course must have been completed at least 14 days prior to turnout, otherwise animals will not be fully protected.

"Where an annual booster is required, it is worth discussing with your vet as to the best time to start a vaccination programme so that booster administration falls prior to a high risk period.

" Vaccines are never prescribed for newborn animals because in the first few weeks of life they are immunologically incompetent, i.e. their immune system hasn't started working yet. In addition, colostral immunity may interfere with the response to the vaccine, and shorten the duration of immunity from the vaccine."

Vaccinating calves against pneumonia

Paul explains: "In cattle buildings there can be a mix of viral and bacterial pneumonia pathogens present. In these cases, vaccination doesn't guarantee that calves won't have clinical signs of pneumonia, as they may succumb to bacterial causes. However, vaccination will reduce the viral load, so the animal's immune system is only having to fight the bacterial infection.

"Some dairy farms in the past have decided to cease their calf vaccination programmes because calves were doing really well, and they hadn't had many pneumonia problems for a while. But the viruses that commonly contribute to pneumonia – PI3 and RSV – are found in most, if not all calf sheds. By ceasing to vaccinate, then over time a recurrence of pneumonia cases is seen as the virus load builds up.

"However, before re–prescribing the vaccine, diagnostic tests need to be carried out to check it was the same pathogen as previously, and not a new infection requiring different treatment."

Vaccination – an insurance policy

Where a combination of vaccination, management and culling policies have eradicated a certain disease from the flock/herd, animals will become 'naïve' and have no natural immunity, i.e. no antibodies to it. This puts them at a huge risk of developing clinical disease should the virus enter the herd/flock.

For some diseases, especially highly contagious ones like IBR and BVD in cattle, vets may recommend vaccination be continued as an insurance policy.

That's the case on the Orkney Islands, as vet Andy Cant of Northvet Vet Group explains: "Back in the late 1990's when BVD was first recognised as the major underlying cause of many disease outbreaks, Orkney farmers collaborated to get rid of it. Vets carried out whole herd blood tests to hunt down the PI animals, and most of these were culled. Alongside this, herds were vaccinated to protect the breeding stock against unidentified sources of virus.

"Prior to this eradication programme, the pattern of endemic disease meant there was widespread natural immunity among many cows. So major disasters, whether in the form of abortion or mucosal disease in growing cattle, were limited to naïve herds where virus had been introduced, and large numbers of PI animals created.

"Natural background immunity would limit the number of PI's born into the majority of herds, but even so the presence of just one PI would depress the immune system of all the other calves and cause increased disease.

"The success of the eradication scheme in Orkney now means that the BVD virus levels on farms are close to non–existent and the general health of youngstock has improved. We see a lot less scours and pneumonia in calves, and welfare and production has improved. Eradication does pay off!

"However, there is an Achilles heel to this success: nowadays most herds here – unless vaccinated – will be totally naïve to the virus and so have no background natural immunity. Ironically this means farmers should now be vaccinating more than ever!" says Andy. We advise farmers to maintain a BVD vaccination programme as an insurance policy.

"Farmers who don't want to vaccinate need to be 100% certain of their biosecurity and keep a totally closed herd. In my opinion this is almost impossible, nature has a canny knack of fooling even the most robust biosecurity system. It only takes one lapse of concentration, one exceptional circumstance and then…."

Vaccines:
options for flock protection

CALWETON
VETERINARY GROUP

Miranda Macinnes
Calweton Vets

Vaccines are also part of the sheep farmer's armoury to protect the health and performance of flocks.

Miranda Macinnes of Calweton Vets explains: "As with cattle, the success of any vaccination programme is reliant on vaccines being administered to healthy animals in 'healthy' environments, and choosing vaccinations appropriate to the disease challenges on a given farm.

Clostridial diseases

"The most widely used vaccines in the sheep farming sector are those for clostridial diseases," explains Miranda. "Many also include protection against Pasteurella pneumonia, which whilst also a bacteria is not a clostridial disease. These vaccines contain inactivated toxins and full cover is only achieved after the second dose.

"Products differ in terms of how many clostridial diseases they will protect against, and whether or not they are suitable for providing protection to newborn lambs via colostrum, particularly important for preventing lamb dysentery.

"Typically, ewes are vaccinated in late pregnancy so that their lambs are protected through their colostrum. Be aware that this method of cover against Pasteurella typically only lasts around a month, so if this is a particular concern, repeat vaccination may be required.

"With respect to clostridial protection, duration will vary according to colostrum intake and the particular clostridial disease concerned. A lamb's immunity will start to fall between 8 and 16 weeks of age. If lambs aren't finished until 6 months of age, they may have no protection against clostridial diseases during the last few months. Good records of lamb losses and when they occur will help guide whether vaccinating lambs against clostridial disease in their own right – rather than via colostrum – would be of benefit to production.

"Ewe lambs which are kept on as breeding replacements can be started on their own vaccination programme at 6–8 weeks, with a second dose at 12 weeks and then a single booster given before lambing to protect their offspring.

Control of lameness

"One of the biggest areas where the sheep industry can reduce its use of antibiotics is in the management of lameness," says Miranda.

"Foot–trimming remains a popular practice, however it has long been recognised that at best this does no harm, and may actually be detrimental to success. Indeed, the best results are achieved by not trimming at all, but giving prompt treatment with an antibiotic, re-inspecting the foot within the week, and repeating treatment if necessary. Whilst this benefits sheep welfare and productivity it can cause antibiotic usage to surge.

"Flocks that include the footrot vaccine in their control programme can expect to see dramatically reduced lameness incidence and so, antibiotic use. Over time, vaccination frequency can usually be reduced to an annual dose.

"CODD is not fully understood yet, but it is thought to be due to multiple different infectious agents, with footrot playing a role. So vaccination may also be part of the armoury for CODD control, and may help make animals more robust in withstanding the infection.

Orf – a zoonotic disease

"Orf is a painful disease giving rise not just to scabby lips but also lesions in the mouth and on the tongue. It can really check growth rates at a key time when lambs should be growing fast, ultimately delaying their finishing," says Miranda.

"The vaccine for orf is live and should only be used if the virus is already present on the farm. It is awkward to administer as a small amount of vaccine must be applied via a scratch to the skin surface.

"Orf is a zoonotic disease, so care is also needed in its use: immuno–suppressed people should not

be allowed to come into contact with it. Plus anyone who administers the vaccine, must wear a thick glove on the hand which will hold the sheep. You do not want to accidentally inoculate yourself with the live orf virus!

Protection from abortion

"Vaccines are available to protect ewes from abortions by toxoplasmosis and the bacteria *Chlamydophila abortus* – the cause of enzootic abortion, or EAE.

"To prevent enzootic abortions, farmers should keep a closed flock, or only buy in from accredited flocks. Should an abortion storm due to EAE be diagnosed, antibiotics will be needed. The following year, vaccination of all ewes should be carried out. Thereafter typically only replacement ewes will need dosing. You only need to rear a few extra lambs and the vaccine cost is covered.

"Toxoplasmosis however, is caused by a single–celled parasite which is found in cat faeces. Reliable biosecurity measures are not possible, and so vaccination is recommended."

Oily vaccines

"Be aware that some vaccines, in particular the Johne's vaccine, are very oily and there will be a greater risk of abscesses at the injection site," warns Miranda. "Farmers with show flocks may prefer to adopt alternative management strategies to prevent disease."

Johne's disease

In a recent UK survey of larger commercial sheep enterprises, PCR tests on faeces revealed 64% of samples were positive for Johne's bacteria.

Miranda explains: "Unlike Johne's in cattle, affected sheep do not scour, and so its presence in a flock may not be recognised. As with cattle, the clinical signs are wasting in older animals. Infected flocks are also likely to have higher culling rates.

"The cost of this disease is not just the replacement cost of the cull: infected ewes tend to be less fertile and have lower milk quality, and these effects reduce the overall performance of the flock.

"Johne's disease in sheep requires a different approach from cattle. It needs to be addressed at flock level with damage limitation the aim. Regular condition scoring can help identify infected ewes and these should proactively be culled. Protecting ewe replacements with the aid of a vaccine may be appropriate for flocks wanting to eradicate this disease. It may also be wise to screen purchased stock via pooled faecal samples. Farmers should seek advice from their vet on the best strategy for their flock."

Care of vaccines on–farm

The on–farm storage and administration of vaccines are also factors which can impact on the efficacy of a vaccine.

Miranda explains: "Vaccines are sensitive – they should not be allowed to get too hot or too cold. Consider bringing a coolbox when collecting vaccines and ensure they go into your fridge as soon as possible. Conventional fridges are designed for storing food not medicines so be aware that some areas of the fridge may freeze, which can render vaccines useless. It can be worth investing in a fridge thermometer, or even better, one with an alarm.

"Before administering a vaccine, always check its use by date, and also its route of administration as brands can differ," adds Miranda. "Once a vaccine vial is broached, it must be used within 8 hours."

Information and advice on storing, handling and administering vaccines (and antibiotics and wormers) is provided in the FarmSkills Mastering Medicines courses being run by XLVets practices. For information on the nearest FarmSkills course, visit **www.farmskills.co.uk.**

Tightening up herd biosecurity to reduce TB testing frequency

FriarsMoor Livestock Health

Next year, the TB testing frequency for a herd in the High Risk Area will increase from being annual to 6–monthly. However, yearly testing will be allowed to continue if a herd has joined one of the CHeCS bTB accreditation schemes and completed the actions required to reduce the TB risk. That's the goal for Wiltshire dairy farmer Peter Shallcross who has tightened his biosecurity measures and signed up to one of the schemes.

Rhian Rochford
Friars Moor
Livestock Health

Vet Rhian Rochford of Friars Moor Livestock Health has been helping Peter to assess the potential TB threats from wildlife, and advising on the practical means and management policies which can help protect his herd.

At Wallmead Farm near Salisbury, Peter Shallcross milks 200 dairy cows which are grazed from March to October and average yields of 8,500 litres/cow. He has been using a selection of genetics to improve fertility and create an animal suitable for grazing: cows are hybrids of Swedish Red and White, Norwegian Red, British Friesian and Holstein.

Peter used to buy in cattle ad hoc, e.g. bulling heifers to make up numbers, and stock bulls. Then in 2012, the herd had its first TB shutdown. It is possible that a recently purchased animal had been carrying TB. The herd tested clear again after 6 months, but since then Peter has elected to keep a totally closed herd, and not buy in any cattle at all. There are no longer any bulls on the farm: all heifers and cows are AI–ed.

A number of other contagious diseases had also entered the herd in purchased cattle, including digital dermatitis, BVD, campylobacter. However these are now under control/eradicated.

TB focus

So keeping TB away is now the focus for Peter. He explains: "We are not only in a High Risk Area, but I am convinced that wildlife in the parish has become infected with TB because my neighbours' closed herds have recently contracted the disease. And I can see two badger setts from the yard!"

Rhian adds: "TB is the biggest cattle disease in the country. Farmers can be happy to pay for vaccines to protect their herds from BVD, IBR and leptospirosis, but what about changing herd management policies and tightening up biosecurity to protect herds from TB? This doesn't have to be costly.

Practical measures

Rhian has been advising Peter on some practical measures to improve biosecurity.

"First of all, we identified whether badgers were coming into the yard and the cattle buildings," explains Rhian. "Peter set up some temporary cameras on the sheds, and sure enough they came into the yard at night."

To prevent any direct badger contact, or indirect contact via faeces, urine or saliva, Peter has sheeted all the gates surrounding the cows' loafing and feed area, the cubicle shed and the open face of the maize clamp. Stockboards have been fixed on the outside of gates and fences – badgers cannot climb up the smooth sides.

This gap between the buildings has been boarded up

Because of the sloping yard, the boarding on the gate is hooked onto a high bar in the daytime and then lowered at night

The unopened end of the maize clamp has also been electric fenced, with a series of wires set close to the ground.

Concentrates are fed in the parlour. To prevent badgers entering, a sliding door and roller door have been installed at either end, and these are kept shut at night

All the farm's boundaries have been double fenced with a 3m gap. Rhian adds: "The double fencing can include a road, a wall or a hedge between two fences."

Peter adds: "Everyone can do something. I looked at the high risk easy wins first.

"For example, I always put mineral tubs out at pasture so I bought some badger–proof raised holders which have sheer sides. These need to be placed out in the field and not tied to the gate as otherwise badgers can use the bars to climb up and get to the minerals."

Rhian comments: "Peter has been taking a proactive approach and has looked at what can be done now to prevent getting TB again in the future.

Fewer TB tests

Now that Peter has instigated a range of biosecurity measures, on top of his closed herd policy, he has joined the CHeCS bTB accreditation scheme.

Rhian explains: "As long as the herd continues to test clear of TB, then after one year, it will be given a score of CHeCS 1. Then for every year the herd stays free of TB, the score goes up, to a maximum of CHeCS 10.

Rhian explains: "The regulations on TB testing for farms in the High Risk Area will change next year: 6–monthly testing will be required. That frequency of testing is going to be a challenge for some farms – especially suckler herds which may all be out at grass with calves for at least one of the tests each year.

"However, farms which have, for instance, signed onto the CHeCS bTB accreditation scheme and have a score of 1+, will be able to continue with just the annual test. This is because they can demonstrate they have implemented management policies and biosecurity protocols which reduce the TB risk to the herd. Hence Peter's motivation to join the accreditation scheme.

"There are several stand–alone TB accreditation schemes for farmers to choose from. As well as protecting herds from disease, the scoring systems are also of benefit to sellers and buyers of cattle. Farmers – especially those in the High Risk Area – should be considering these schemes and discussing them with their vets."

Rhian adds: "Remember that this disease is an epidemic in both cattle and wildlife. Farmers need to protect their herds from both sources of infection by maintaining good biosecurity at all times."

Buying in stock?

It's not always possible to keep a closed herd. When buying in animals, find out the 5–year TB history of the herd you are buying from, not just the history of the animals you are buying. Visit **www.ibtb.co.uk** for more information.

Some practical ways to badger–proof the farm and herd

Here, Rhian Rochford, vet and TB specialist at Friars Moor Livestock Health suggests some practical ways to protect animals in the herd from coming into contact with TB–infected wildlife, specifically badgers.

"Restricting contact between badgers and cattle, and managing cattle feed and water are two key areas where farmers can take action to safeguard their herd from TB infection," explains Rhian.

Are there any badgers?

"Farmers sometimes tell me they don't have badgers – because they've not seen any, and aren't near any setts. But a badger can cover 5 miles in a night! And when I've taken them badger tracking – we've often found some telltale signs.

"In the fields, look for badger runs and latrines. Also look out for scratch marks on the outside of water troughs, or on sheets/doors on feed stores.

A badger latrine

"To see if badgers are coming into the farm yard, set up some temporary security cameras. A cheaper alternative is to put out some sand and check each morning for the distinctive wide pawprints of a badger.

"Farms may not have badgers today, but they might tomorrow.

"Wildlife such as deer also carry TB, but are much less of a threat: they don't actively seek out feed and are less likely to come into a yard in the daytime.

In the fields

"Having located a badger sett, then fence off the latrines so they can't be grazed – but be aware that the locations of these do change. Alternatively, keep the field for grazing sheep.

"Raising water troughs above badger height is often not practical if youngstock will also be grazed in the field. So look at using overhanging water troughs or those with roll bars.

"Buckets of mineral tubs are appealing to badgers. These need to be sited in a raised badger–proof feeder, alternatively consider whether administering mineral boluses would be a better strategy.

The smooth sides of this feeder prevent badgers reaching the minerals tub

On the farm

"People can also spread TB – through TB–contaminated muck on their boots, or on shared farm machinery. So when it comes to biosecurity, consider taking the same approach as a pig or poultry farmer would.

"Visitors onto the farm should have clean footwear and this should be dipped in disinfectant at the gate/door. Some farms have guest wellies for visitors. Wellies/footwear should also be cleaned off when leaving the farm.

For foot dips, both the disinfectant product used, and its concentration, are important. A list of TB–approved products and the necessary concentration rates can be found on the website: **disinfectants.defra.gov.uk**

Around the farmyard

"Badgers are very agile and determined. They love maize silage, TMR rations, concentrates, and milk. They can squeeze through small gaps and climb up the bars of farm gates to get to food.

"To stop them coming into a yard, walls or fencing need to be smooth – not made of netting! – and at least 1.5m in height. Gaps underneath and beside doors, gates and barriers need to be less than 7.5cm, i.e. 3 inches."

Walls/fences need to be at least 1.5m in height to stop badgers

"Gates and barriers need to be sheeted on the outside, otherwise badgers will use the bars as a ladder. This applies to all the exits and entrances on all the buildings, including the dry cow area and calf sheds.

Correct! The gate is sheeted on the outward facing side

Badgers won't be able to get under this gate, but they will be able to climb up the bars and get into the shed

"Many cubicle sheds have feed passages inside down the centre. Badgers will come in at night to feed, so ensure that all gates or doors are shut at night. Similarly, if cake is fed in the parlour, this needs to be securely shut off at night. Make sure that the area underneath silos is also kept clean.

"Badgers have been known to come into calf sheds and suckle off the teats of calf feeders. So ensure they can't get into the shed, and store the teats and feeders where they can't get to them.

"Badgers love maize: so use electric fence strands around the maize clamps at night – four strands of wire is the recommendation, set off the ground at heights of 10cm, 15cm, 20cm and 30cm."

For more information on biosecurity visit **www.tbhub.co.uk**

Key actions to protect herds from TB

RESTRICT
contact between badgers and cattle

MANAGE
cattle feed and water

STOP
infected cattle entering the herd

REDUCE
risk from neighbouring herds

MINIMISE
infection from cattle manure

Multi–pronged strategy helps speed Johne's disease eradication

Perthshire farmer Neil McGowan has been working towards eradicating Johne's disease from his suckler herd, with the advice and veterinary support of Graeme Richardson of Thrums Veterinary Group.
Much progress has been made thanks to a multi–pronged strategy which includes reducing the environmental challenges as well as the strict culling of Johne's–positive animals.

Graeme Richardson
Thrums
Veterinary Group

At Incheoch Farm, near Blairgowrie, Neil McGowan and his father Finlay run suckler herds of Luing, Simmental, and Sim–Luing crosses, with 200 cows and heifers in total. Bulls and heifers are sold on–farm.

Neil McGowan

Neil explains: "My family and I moved here about 25 years ago, and that's when we started to have issues with Johne's disease in the herd. Affected cows would scour and lose condition."

About Johne's

Graeme explains: "The MAP bacterium responsible for causing Johne's can survive indefinitely on some pastures, and in watercourses.

"So as well as testing to identify and remove infected animals in the herd, farmers also need to reduce the environmental challenges, for instance, ensuring cattle can only drink 'clean' water.

"Johne's tests are highly specific for the disease, but not that sensitive. So a test might only detect 25–40% of Johne's positive animals that are present. Those undetected animals will be left in the herd where they can continue to shed the bacterium in their muck.

"When purchasing cattle, farmers should ask about the status of the source herd as this is actually more important than an individual animal's results.

"So while health schemes give accreditations to herds for being IBR–free or BVD–free, it's different for Johne's disease. Herds can only be assigned a risk level as it can't be absolutely guaranteed that no Johne's–positive animals are present. Only when the whole herd has tested negative for 3 consecutive years, can a herd be denoted as a Risk Level 1. There is a premium price paid for breeding cattle which achieve this ranking."

Testing times

In a bid to start eradicating Johne's from the herd, and benefit from higher health, higher value, sale animals, Neil joined the Premium Cattle Health Scheme back in 2002.

All cattle are blood tested every year, he explains: "We've followed all the rules: we've culled the Johne's–positive animals, as well as any with inconclusive test results. We've also culled family lines.

"We used to vaccinate all our heifer calves. It helped keep a lid on the disease for a while, although the older cows would still develop the disease.

"Of course, when we started blood testing, the vaccinated animals threw up 'wobbly' results because antibodies from the vaccine 'muddied the water'. So we stopped vaccinating.

"The last vaccinated cows left the herd about 6 years ago, but looking back, I wish we hadn't been vaccinating and had taken a different approach sooner."

Graeme comments: "I'm against vaccinating for Johne's. It does reduce the numbers of clinical cases, but it also allows the numbers of infected animals in a herd to increase."

Reducing environmental challenges

Neil explains: "We also looked at how and where the disease could spread. There were some easy practical steps to take: keeping water troughs clean and muck–free; and at calving time, making extra efforts to keep bedding cleaner.

"A lot of fields used to be watered naturally by streams. So we put in a bore hole for our own water and installed an extensive network of troughs.

Cattle no longer drink from streams, but from troughs of 'clean' water, piped from a bore hole

"I've also fenced off a lot of waterways and created water margins using funding from environmental schemes."

To give biosecurity from neighbouring herds, perimeter boundaries have been double-fenced

Pastures are also limed – raising the pH which reduces the viability of the bacterium as well as benefiting grass growth.

Culling decisions

"When we used to get high numbers of Johne's positive animals, we'd manage them as a separate mob," says Neil. "We'd put them in isolation from the rest of the herd, give them extra feed, and not put them in–calf but sell them as culls. At that time, the testing was a relatively profitable option because they never reached the wasted cow stage.

"But now we just get the odd positive or inconclusive result and so we manage each on an individual basis depending on their age. But they are always culled.

"It's a dreadful thing waiting for the test results to come back, hoping that your favourite cows are negative. Sometimes we have a lot of hopes and plans for those cows."

Graeme says: "The blood tests provide the information and then it's down to farmers to use it and follow through with good hygiene measures or culling management.

"The results provide the information on which to base decisions not only for culling but also on which heifers to retain. Sitting down with the herd book and a cup of coffee is time well spent and allows us to fully utilise the information acquired through blood testing.

"The harder farms grasp the nettle, the faster they will travel down the road to freedom from the disease."

Graeme adds: "The Johne's test can throw a small number of false positives – 1 in every 2–300 animals. TB tests can also interfere with readings. So inevitably, when farms get close to the end point of eradication there is a small possibility of culling animals which may not have the disease."

Going forward

Neil explains: "Our main drive is to stay accredited free of BVD and gain Risk Level 1 for Johne's disease. We are currently at Risk Level 2 as we're still getting the odd positive. It's disheartening that we're not quite getting there, but we know it's difficult to achieve in the area we live.

"We are continuing to blood test all our cattle for Johne's disease – that's 250–300 tests every year. Also, we only buy in bulls, and these come from high health herds."

Graeme says: "Neil makes full use of the information given to him and pays attention to the detail. That's why he's made such big strides forward in eradicating Johne's disease.

Johne's disease issues are regularly reviewed by Graeme and Neil

"Every farm is different and interpreting Johne's test results requires knowledge about the herd and its management. Neil and I will have lots of discussions through the year.

"It's also not enough to adopt a single strategy – Neil's success comes from testing, culling hard, and carrying out a range of activities to reduce environmental challenges."

Graeme adds: "In our Thrums practice, the disease incidence has dropped massively over the last 5–10 years as people have embraced Johne's control programmes. Nevertheless, more cattle are still culled or die from Johne's than any other disease."

Poor flock performance?
Could it be Border disease?

Larkmead VETS

A poorer scanning percentage than normal, an increased barren rate, higher abortion and stillbirth rates, and increased neonatal lamb mortalities – these are all signs of Border Disease.

JP Crilly
Larkmead Vets

Here, vet JP Crilly of Larkmead Vets explains how this viral disease affects flock health and performance. With no vaccine available for Border disease, he also advises on how to track down carriers of the virus, and the buying–in protocols needed to keep it out.

Signs of Border disease

"Border disease is the name given to infection in sheep by a family of viruses known as pestiviruses," explains JP. "The sheep pestivirus is Border disease virus (BDV), another example of a pestivirus is the BVD virus (BVDV). Both can infect sheep.

"As with BVD in cattle, the consequences of a sheep becoming infected will depend on when the infection occurred.

"In non–pregnant adult sheep, infection is often missed, because the only sign might be a transient elevated temperature.

"However, infection of the ewe during early pregnancy can cause embryo death – and could be the reason behind high barren rates in a flock.

"Infection later in pregnancy can cause stillbirths and the birth of weak lambs. The virus temporarily damages the immune system, so infected animals, especially lambs, are at greater risk of other infections. Studies in Spain found that lambs infected by Border disease virus were over twice as likely to develop respiratory disease or diarrhoea than uninfected lambs."

Seven different strains of the Border disease virus have been identified and vary in their virulence and hence the severity of clinical signs they produce. The most virulent strains produce severe symptoms even in adult sheep. These include: fever, diarrhoea, respiratory disease, depression and reduced appetite.

JP explains: "Fortunately, once an animal has been exposed to the BD virus and recovered, then its immune function returns to normal and it becomes immune to the virus.

"However, infection of the ewe during pregnancy prior to day 80 of gestation can lead to the development of 'persistently infected' (PI) lambs. These will shed the virus throughout their lives.

"This is because at this stage of development, the foetus's immune system is learning what is 'self', and is to be tolerated, and what is 'non–self', and requires an immune response. If the virus infects the foetus prior to this point, the immune system considers it part of the lamb, and so the animal will remain infected for the whole of its life, shedding virus, and never mounting an immune response to the virus.

"Infection at this point can also damage the developing skin, skeleton and nervous system of the unborn lamb. The most commonly seen congenital abnormalities resulting from Border disease infection during pregnancy are a hairy coat and damage to the nerves leading to a tremor. Affected lambs are often referred to as 'hairy shakers'. However, PI lambs can also appear perfectly normal.

Persistently Infected (PI) lambs may exhibit shaking and have rough hairy coats like these, or they may appear completely normal

Preventing Border disease

"There is currently no vaccine available for Border disease," says JP. "So preventing the virus from entering a BD–free flock is key.

"The fewer animals that enter a flock, the lower the risk of Border disease introduction. Consequently, closed flocks have the lowest risk of exposure to Border disease, whereas flocks buying female replacements from multiple sources are at the highest risk.

"Where small numbers of animals are being bought–in, e.g. only tups, then all incoming animals can feasibly be tested for the BD virus.

A lower lambing percentage than normal, and/or poorer health of young lambs could be signs Border disease has entered the flock

"Some labs offer this test as part of a quarantine screening package when testing for other diseases like Maedi Visna or CLA.

"Some producers of breeding rams are now testing for BD virus before offering them for sale, to ensure that they are not PIs.

"Where larger numbers are being bought–in, e.g. ewe replacements, then the cost of testing all incoming animals can seem prohibitive. However, if purchasing from a single source, then negotiate with the seller to have a screening test carried out prior to purchase. Alternatively, screening for the disease can be performed on a test group of animals once they have arrived on farm – if antibodies to BD virus are detected, then all animals will need to be tested to find and remove any PIs.

"This won't be feasible if female replacements are purchased from multiple sources. In these cases, all incoming animals need testing for the virus, or isolating for a prolonged period and then a sub–group screened for exposure."

A classic case of Border disease

In 2015, a 500–ewe Mule flock experienced higher than usual levels of neonatal lamb mortality, and neonatal infectious diseases – joint ill, navel ill, and scour.

JP explains: "Initial investigation focussed on ewe nutrition and lambs' colostrum intakes, however both were found to be adequate. Then, three weeks into lambing, two lambs were born fitting the classic 'hairy shaker' description. These were euthanased and submitted to the local veterinary investigation lab. Border disease virus was confirmed.

"These two lambs were the only 'hairy shakers' to be born, although several other lambs were weak and unable to stand. Four lambs died at 4 weeks of age with a short history of respiratory signs – BD virus was detected in all four.

"As this was the first year that such problems had been seen, it was considered most likely that BD virus had been introduced since the last lambing period. In fact, the previous year, 200 gimmers and 10 rams had been purchased due to flock expansion. Over the winter of 2014–15, a higher level of mortality than normal had been seen in the pregnant gimmers.

"We blood tested all the recently purchased rams and ewes for BD virus. A single PI ewe was detected and culled. However, it is possible that some/all of the gimmers which had died over the previous winter had also been PI animals. It was instructive to note the very large number of different flock numbers on the ear tags of the purchased gimmers."

Diagnosing Border disease

JP advises: "If a flock has had a poorer than expected reproductive performance – a disappointing scanning percentage, more barren ewes, abortions, stillbirths, or seen more weak lambs and had a higher mortality rate – then Border disease should be considered.

Flocks can be screened for presence of Border disease by blood testing lambs for antibodies

"In 2017 I was involved in a collaborative study with vet Emily Gascoigne of Synergy Farm Health and the University of Edinburgh which found evidence of exposure to pestiviruses in 13 of 34 British flocks – more than a third of flocks.

"Aborted or barren ewes can be blood tested for exposure to the Border disease virus. The virus can also be detected in the blood and tissues of infected and PI animals, so it's worth submitting samples from suspected PI animals, or animals thought to have died from Border disease.

"To screen for the disease in a flock, a relatively easy way is to blood test a number of homebred lambs for antibodies to BD virus. In milking sheep flocks, the BD virus, and antibodies to it, can be detected in milk, so bulk tank screening can be done.

"With no vaccine available for this disease, the focus must be on identifying and removing all PI animals, and paying attention to buying–in protocols – or, even better, keeping a closed flock," adds JP.

Instigating a colostrum protocol was first step to reducing pneumonia cases

Mount Vets

Piers Pepperell
Mount Vets

An increase in calf pneumonia cases prompted Somerset dairy farmer Sam Tucker to ask his vet about starting up a vaccine programme. But Piers Pepperell of Mount Vets first reviewed the farm's colostrum policy and instigated a new protocol which has boosted calf immunity and improved respiratory health.

At Home Farm in Sampford Arundel near Taunton, Sam Tucker farms with his family on a mixed enterprise with a dairy herd, beef finishing unit, sheep and arable cropping.

The high yielding dairy herd averages 9,600litres/cow on a summer grazing, all year round calving system. Over the past five years, numbers have expanded from 130 to 180 and a new shed has very recently been constructed, creating a total of 200 cubicles. However, with more cows, there is now more pressure on space for calves.

Sam explains: "Young calves are housed in part of an existing building. It's not purpose–designed for them, and we know the stocking density is a bit high. So we all pay attention to keeping the bedding clean, and ensuring they always have access to clean water and starter pellets. To help with ventilation, we've also installed an air sock."

The air sock overhead creates positive pressure ventilation, ensuring clean air for young calves

Piers comments: "This positive pressure ventilation system brings air in from outside, and pushes the stale air out of the building preventing viruses from circulating."

Sam Tucker

Fresh calver care

Unusually, calves are left in the straw–bedded calving pens to suckle from their dams for the first week. Every morning the cows are fully milked out and then join the herd. In the afternoon milking, they are only partially milked out before being returned to their calf for the night.

Sam sees this has many benefits: "It's a lot more comfortable for these high yielding cows with their swollen udders to lie down in a straw pen rather than a cubicle. Cows can easily slip down after calving, they're sore, and they're soft hooved after being on straw for several weeks. This system also helps heifers adjust to being in cubicles. And it saves me time as I don't have to give the second and third feeds to the calves."

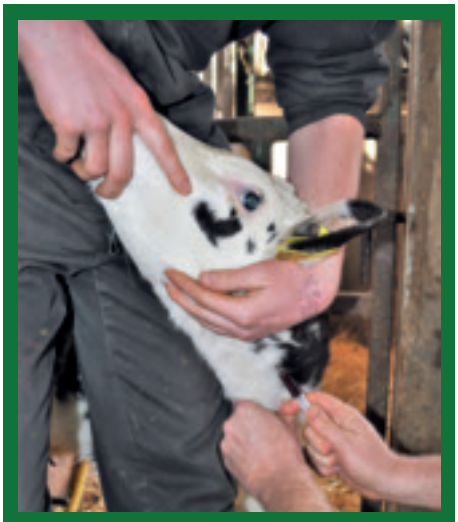
Piers comments: "As long as the cow is being milked out then there's nothing wrong with this practice. There's no loss of milk to the tank. There's less stress for the calf initially, although arguably the bond with its dam will be stronger after a week."

Vaccine request

Last summer, the farm experienced a rise in pneumonia cases: more than half the calves were needing remedial antibiotic treatment.

During one of Piers' fortnightly fertility visits, Sam asked about starting a vaccination programme.

Piers explains: "So that day, I took some blood samples from five 4-month-old calves to see what pathogens were present, and hence whether, or what, vaccine treatments might be needed. It doesn't cost very much to carry out a blood test, and there is frequently subsidised testing available, so farmers shouldn't hesitate to ask their vet about this.



Taking blood to monitor 'total proteins level' an indicator of immunity and in turn, colostrum intake

"Several calves under 10 days of age were bled to determine the 'total proteins level', an indicator of antibody levels and in turn, the quantity and quality of colostrum intake. I asked Sam what the colostrum policy was."

"A good vaccination protocol will not fix a poor colostrum protocol."

Sam explains: "We used to let the calf suckle from the cow and only intervened with a tube if the calf was looking empty. We rarely tubed anything and usually left it to nature."

The total proteins test revealed that half the calves had not received enough colostrum.

Piers explains: "A weak calf with a struggling immune system and no/low antibodies is not only unable to mount a strong defence against infection, but also isn't going to have the strength to develop a good antibody response to a vaccine. It's not that the vaccine isn't working, it's that the calf isn't strong enough to respond adequately."

The analysis also revealed the presence of IBR, and *Mycoplasma bovis*.
Piers explains: "The presence of the Mycoplasma signalled the need to change the antibiotic used to treat pneumonia. It's a bacterium that will take advantage of a situation when things are not going well. So we can't ignore it."

New colostrum protocol

With Piers' advice, a new colostrum protocol has now been instigated, and is managed by Sam.

Freshly calved cows are now promptly taken to the parlour for milking. Here, Sam records the quantity of colostrum given and assesses its quality – and suitability for feeding – using a colostrometer. Surplus good quality colostrum is frozen. Colostrum from any Johne's positive cows is discarded.

Calves receive 3 litres of colostrum via tube or teated bottle within 2 hours.

On his fortnightly visits, Piers takes blood samples from 0–10 day old calves to monitor their total proteins level.

Sam keeps records of the quantity of colostrum collected at the first milking, its quality, and whether the calf was fed via its dam's teat, bottle or tube.

Sam adds: "The results can sometimes be surprising: a calf may look like she has really suckled well, but the test results show it has not had enough colostrum. Also, while we might expect a heifer to have less colostrum – I've had some give 10 good quality litres of it. Tubing has also given better results than bottle feeding."

Piers adds: "Getting colostrum into the calf quickly is key. Our routine monitoring has shown that tubing has resulted in higher antibody levels than bottle feeding. This is probably due to a greater amount ending up in the calf rather than bottle feeding when half a litre may be dribbled onto the floor."

The next steps

The new protocol has ensured all calves are getting the colostrum they need to develop a good immune system. Pneumonia cases have dropped significantly, however there is still a 20% incidence.

Piers explains: "We've not started a vaccine programme yet, as the focus has been on getting the colostrum management right first. A good vaccination protocol will not fix a poor colostrum protocol.

"Sam has signed up to Calf Tracker and we are now routinely monitoring antibody levels in young calves to check colostrum intakes, plus weigh banding to check growth rates are on track. All pneumonia cases are recorded too. With this information we can see which calves are contracting pneumonia and tailor our vaccination protocol to get the most benefit.

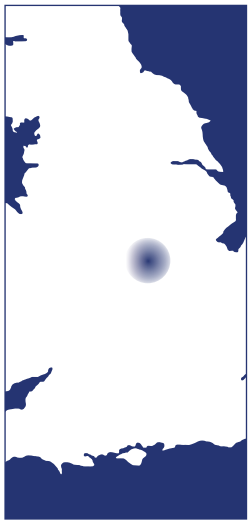
Calves are now being weigh banded to monitor growth rates

"Calf management here at Home Farm is very good, but they are quite densely stocked, so we have to accept a vaccine may be needed."

Boosting trace mineral levels to safeguard fertility and herd efficiency

Farm Veterinary Solutions
Caring for the health of your business

Ensuring sufficient intakes of key minerals and trace elements is essential for maximising livestock performance and productivity. Here, vet Max Hardy of Farm Vet Solutions explains that even marginal deficiencies of trace elements can still compromise animal performance, despite the absence of any clinical signs.



Max Hardy
Farm Vet Solutions

Deficiencies in trace elements

Max explains: "Trace elements are minerals which are only needed in very small amounts, yet they are essential for the formation and activity of key enzymes, vitamins and hormones. Thus, deficiencies have a negative impact on an animal's growth, fertility and its ability to fight disease due to a reduced immune function.

"The major trace elements are: selenium, cobalt, iodine, iron, copper, manganese and zinc.

"There are some classic clinical signs of mineral deficiencies. For example, goitre in calves as a consequence of iodine deficiency, or swayback in lambs due to copper deficiency.

"However, these clinical signs of deficiencies are the tip of the iceberg and rarely seen these days, except where animals have been under pressure for food.

"More commonly seen are marginal deficiencies where the levels of one or more minerals is low. Although livestock show no clinical signs, their body's ability to carry out chemical functions is impaired. The presence of a deficiency may only be noticed when an element of performance is lower than expected."

Focus on efficiency

At Little Oxendon Farms near Market Harborough, Did Gowling runs a mixed farm with his wife Louise and parents Robert and Liz. The livestock enterprises include a flock of Suffolk cross Mules and a commercial Simmental suckler herd.

Did explains: "We have been expanding the herd over the past eight years and consider that a herd of 250 cows and heifers works well for the farm. The limiting factor is straw from the arable ground."

Around half the cows are put to an Angus bull and the resultant offspring finished for a supermarket contract. The remainder are put to a Simmental bull for replacements. Simmental bull calves are kept entire and sold at 16 months of age.

Did Gowling

"Having bulls which are easy calving is the priority for us. Also, the Simmental bulls are polled, which saves having to disbud the calves."

One of the polled Simmental bulls

"We had been calving heifers at 3 years of age, but we've now tightened the calving pattern and for the first time are calving them at 2 years. Calving starts in March, and lasts for 12 weeks."

The herd is vaccinated against BVD, IBR and leptospirosis. In–calf cows/heifers are also vaccinated against scour: their immunity is passed to their calf via the colostrum.

Fertility investigations

Good fertility is fundamental to herd efficiency. However in November 2016, scanning results for the herd revealed an empty rate of 15%.

Max was called in to investigate. Bull fertility was checked and semen tests carried out. All were ok. Cows were also blood sampled to test for infectious diseases, and also to determine mineral levels.

Max explains: "The blood samples revealed some major deficiencies in the minerals needed for good fertility. The copper results were half the recommended level, and both iodine and selenium levels were at the low end of the spectrum for requirement.

"In late pregnancy the dry cow has big demands: the growing calf, colostrum/milk production and then a calf which will be reliant on milk for its first 4 months.

"A typical dry cow bolus given in January would provide high levels of trace elements but only for 6–8 weeks, so animals would need a further turnout bolus to make up the shortfall during the grazing season.

"So instead I advised the use of a Vetalis Super Grazing bolus containing zinc, copper, iodine, selenium and cobalt, and designed to release minerals over an 8 month period. By administering it in early January, this would boost trace mineral levels through the critical calving time and support a cow's reproduction system while she was getting back in–calf.

"The minerals in the bolus would run out in August – this was fine as at this time the cow should be in mid–pregnancy and have a relatively low nutritional requirement.

The choice of bolus was based on the minerals required and the length of cover needed

"As calves are creep fed from August onwards, they continue to receive trace element supplementation via the concentrate."

Mineral strategies

Max explains: "Every year we blood-sample un-supplemented pre-bulling heifers as part of an infectious disease screen before they are vaccinated for BVD and lepto. These samples are also analysed for trace minerals, and results have shown that mineral shortages are still present and hence bolusing needs to continue."

Did adds: "Cows and heifers are supplemented with a small amount of bagged minerals in the TMR over the winter, before we bolus them in January."

Max adds: "The bulls are bolused at turnout – they will be serving cows through May, June and July, at a time when they will be reliant only on grazing to maintain body condition and good fertility."

As the farm has a history of grass staggers for the first three weeks following turnout, Did puts out mineral buckets with high magnesium. In the last few years, he has also added magnesium chloride into the water troughs to provide supplementation whatever the weather conditions.

Did explains: "We spend less on bagged minerals and buckets now, but with the addition of the bolus, the overall cost works out the same. The only difference is the work and time involved administering the boluses. It's quite labour intensive but the purchase of a head scoop for the crush has been a worthwhile investment.

A head scoop on the crush has made bolusing quicker and easier

"When cows have been bolused you know they have had the correct intake of minerals, whereas with a bucket you never know how much each cow has had.

"These days, the cows seem to cleanse better and have better health after the birth, so in turn they can get back in–calf sooner. At the last scanning, the empty rate was 7%, much closer to our target of less than 5%."

Max adds: "Maximising herd efficiency includes ensuring that trace element levels fall comfortably within the recommended bands.

"However, mineral supplementation is an extra cost. So farmers need to spend that money wisely and select products with the formulations to counter the specific problems on the farm, and give them at the right time to provide cover for the key risk periods."

Mineral supplementation choices

There are two main methods of boosting trace element levels in a herd or flock – putting out mineral buckets or administering boluses.

Max comments: "Mineral buckets after turnout can seem the cheapest option – but may not be in the long run! Firstly it's not possible to tell if all the animals have had sufficient intakes as some dominant animals will always be present. They can also be a major attraction for badgers and other wildlife, and hence bring a risk of TB in some areas.

"With mineral boluses, it's important that the trace elements are released from the bolus in a steady sustained way for the period specified. If elements are released too fast or too slowly, efficiency will be lost.

"There are a variety of different mineral products available, and at different prices too. Farmers should always speak to their vet about trace element testing first, and then choose a proven product bought from a reputable source."

An interest in intestinal worms triggered new career for animal lover

While working as a receptionist and stock controller at a vet practice, Jules Rottenbury became interested in intestinal worms and their life–cycles. She pursued her interest and became an SQP. Over the past six years she's been advising farmers on products and programmes for worm and parasite control. She is keen to ensure these medicines are used responsibly.

Jules Rottenbury
Torch Farm & Equine Vets

Eleven years ago, Jules Rottenbury could be found managing an outdoor adventure centre – teaching army marines how to drive quad bikes, taking customers horse–riding, and organising paintballing days.

While considering a change in job, she spotted an advert at a local vet practice for a part–time receptionist and stock controller.

Becoming an SQP

Jules explains: "I've a dog and two horses, and I've always been a big animal lover. I even lambed a sheep at the adventure centre whilst in the middle of a quad bike trek, carrying on with the group once I was sure the ewe and her lamb were ok!

"When I joined the practice, it was mixed – clients were farmers, and horse and pet owners. Initially, my job was to look after the stocks of medicines and consumables: order supplies, ensure correct medicines storage and stock rotation, and fulfil client orders.

"During this time, I was amongst vets, and dealing with prescriptions for POM–VPS medicines. I became interested in the parasitic products that vets were prescribing across the group for all species. This sparked an interest in ecto and endo parasites, and at home I started reading up on parasites and diseases, for my own interest.

"One evening I came across the AMTRA website and learnt about SQPs, and what they did. I approached the practice's partners who were happy to support me. I studied in my own time, and with the help of the vets and nursing team, passed the exams in all the modules, and became the practice's first SQP for farm animals. The R–SQP qualification also allowed me to advise on horses and pets, in addition to supplying all VPS medicines.

"I've always had encouragement from my veterinary colleagues at the practice. In fact, in the first year after qualifying, I gained a lot of extra knowledge and a lot more confidence from having their back–up and support.

An interest in worms

"I'm happy to confess to being a worm nerd!" says Jules. "I think they are a very adaptable, resilient species and have some interesting life–cycles.

"For instance, *Haemonchus contortus* – the Barber's pole worm – is a prolific egg layer. Sheep can show clinical signs of infection in a very short time.

"Our vets are reporting increasing numbers of cases of these. It's not easy to differentiate their eggs under the microscope. So are we getting better at diagnosing them, or are there really more cases?

"Other interesting parasites are the bladder

worms – *T.hydatigena* and *T.ovis*. They use both the dog and the sheep as hosts at different stages of their life–cycle. They can cause condemnation in carcasses and are potentially a huge financial loss for the farmer. Treatments for these parasites are ineffective. Prevention is the only solution.

"Well–conducted worm egg counting will help identify which pastures are risky, and when. It may also reveal more about which species of worms are present, or reveal that the problem is not worms, but coccidiosis.

Jules Rottenbury

"Many farms would also benefit from assessing the efficacy of the wormers they are using. They can ask their vet to carry out an FECR test – Faecal Egg Reduction Test. We need to protect the efficacy of the 4th and 5th generation of wormers – the orange and purple drenches. This does not mean saving them until everything else has stopped working. Using these new tools in the box helps keep the other tools sharp!

"Quarantining of new stock is really important too, to prevent wormer–resistant parasites coming onto the farm. This should be discussed with the farm's vet on a case–by–case basis."

Pharmacy Supervisor

These days, Jules spends less time directly advising farmers, having taken on the role of Group Pharmacy Supervisor across both the farm and pet sides of the business. Under the guidance of directors Nich Roper and Neil Blake, Jules has evolved the practice protocols for stock control and developed standard operating procedures to ensure the Group's seven dispensaries run smoothly.

Jules adds: "I meet with directors Dave Tittle and Neil Blake each week to discuss medicine stocks and upcoming requirements; I alert them to any known disruptions in supplies, and we look at sourcing alternatives.

"Our vets are really focused on the core values of giving the best care and using the best products to target the problem.

"As an independent practice, we're not limited to buying from certain manufacturers. We have good relationships with pharmaceutical manufacturers and buy direct through them. Plus, as a member of the XLVet organisation, we have the advantage of purchasing medicines and equipment through the buying arm Broomhall.

Responsible use

"Not all scours are due to worms," says Jules. "Sometimes, drenching a sheep is not the right course of action.

"As an SQP, you need to know when to draw the line and pass the query over to a vet. For instance, sheep can get a bit 'loose'. I can't help or give any advice on what to do about this, because it could be Johne's disease, or stress, coccidiosis or just a change of grazing.

"Some farmers prefer to buy their wormers from an agricultural merchant. I'm happy to have a conversation with the farmer as to which product is most suitable to use. They can buy it from where they want. I don't have a sales target to meet! I just want them to use the right product – at the right time and on the right species. As an SQP, responsible use of medicines is in the forefront of my mind when prescribing and supplying VPS products.

"It would be so helpful if SQPs in agricultural merchants were more prepared either to refer the farmer back to their vet if in any doubt whether to prescribe a VPS product, or to get more information from the vet before supplying them."

Jules adds: "If farmers want to have a healthy business – with healthy animals – then parasite control has to be strategic, and it has to be based on diagnostics and knowing what issues they are facing.

"Once there is wormer resistance on a farm, then there's no going back."

About Torch Farm and Equine Vets

In 2012, the large animal side of the Charter Vet Hospital Group business developed separately to form Torch Farm and Equine Vets. Today there are 21 clinical farm vets, five TB testing vets, and six equine vets, all supported by technicians and registered vet nurses.

The practice spans seven locations which between them cover North Devon, Exmoor, Somerset and down into Cornwall. It has two dedicated farm animal sites at Bideford and South Molton, with large animal hospitalisation facilities at the Ilfracombe site.

The South Molton branch is also home to South West Sheep Breeding Services where a dedicated team of sheep vets carry out AI and ET.

FarmSkills workshops **coming up**

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workshops in the **North**

8th April	**DIY AI (3 days)**	Bishopton Veterinary Group, North Yorkshire
13th May	**DIY AI (3 days)**	Bishopton Veterinary Group, North Yorkshire
22nd May	**Smallholder Skills – Sheep**	Capontree Veterinary Centre, Cumbria
31st May	**Intermediate Foot Trimming and Lameness (1 day)**	Bishopton Veterinary Group, North Yorkshire
10th June	**DIY AI (3 days)**	Bishopton Veterinary Group, North Yorkshire
27th June	**Foundation Foot Trimming (2 days)**	Bishopton Veterinary Group, North Yorkshire
16th July	**Sheep Smallholders**	Bishopton Veterinary Group, North Yorkshire
19th July	**Mastering Medicines (Dairy specialist)**	Bishopton Veterinary Group, North Yorkshire
22nd July	**DIY AI (3 days)**	Bishopton Veterinary Group, North Yorkshire
12th August	**DIY AI (3 days)**	Bishopton Veterinary Group, North Yorkshire
27th August	**Sheep Lameness Control**	Bishopton Veterinary Group, North Yorkshire
6th September	**Dairy Cow Nutrition – Feeding the high yielding dairy cow**	Bishopton Veterinary Group, North Yorkshire
13th September	**Mastering Medicines – Beef & Sheep**	Bishopton Veterinary Group, North Yorkshire
25th September	**DIY AI (3 days)**	Bishopton Veterinary Group, North Yorkshire

workshops in the **South**

1st April	**DIY AI (4 days)**	Shepton Vets, Somerset
1st April	**DIY AI (4 days)**	Belmont Farm & Equine, Herefordshire
2nd April	**DIY AI (3 days)**	ProStock Vets, Carmarthenshire
3rd April	**Mastering Medicines**	Shepton Vets, Somerset
30th April	**Foot Trimming (2 days)**	Prostock Vets, Carmarthenshire
8th May	**Calf Rearing: Birth to Weaning**	Hook Norton Veterinary Group, Oxfordshire
14th May	**Mastering Medicines – Sheep**	Synergy Farm Health, Dorset
15th May	**Practical Calving**	Synergy Farm Health, Dorset
12th June	**Sheep Worm Egg Counting**	Synergy Farm Health, Dorset
25th June	**DIY AI (3 days)**	Synergy Farm Health, Dorset
10th July	**Sheep Worm Egg Counting**	Synergy Farm Health, Dorset
22nd July	**DIY AI (4 days)**	Shepton Vets, Somerset

For more information on our workshops please call **01228 711788**, or to book online please visit **www.farmskills.co.uk**

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