



Special Feature

CAMPYLOBACTER

Ensuring a Healthy Herd means having a plan in place to keep Campylobacter out...

Bluetongue

A brief overview of the disease...

www.xlvets.co.uk

Bluetongue

A Guide...

Bluetongue is a viral infection (an orbivirus) and is spread through midge bites, but there can be transmission through needles during mass vaccination of a flock or herd.

There are 24 types of virus, the current infection is BT8, the same that is affecting the Netherlands and other parts of North West Europe. This strain has arrived from Africa and is different to the strain affecting the Mediterranean.

Clinical Signs in SHEEP

- Eye and nasal discharges which becomes thick and crusty.
- Drooling as a result of ulcerations in the mouth.
- High body temperature.
- Swelling of the mouth, head and neck.
- Lameness with wasting of the muscles of the hind limb.
- Haemorrhages into or under the skin.
- Inflammation at the junction of the skin and the horn of the foot - the coronary band.
- Respiratory problems - difficulty with breathing and nasal discharge.
- A blue tongue is rarely a clinical sign of infection.
- Fever.
- Tiredness.

Clinical Signs in CATTLE

Cattle may show no signs of illness. Clinical signs have included:

- Nasal discharge.
- Swelling of the head and neck.
- Conjunctivitis (red and runny eyes).
- Swelling inside and ulceration of the mouth.
- Swollen teats.
- Tiredness.
- Saliva drooling out of the mouth.
- Fever.

The Vector

Most midges present in the UK are capable of transmitting BTV. Once the midge bites an infected host, the virus can replicate in the midge's gut, before infecting other hosts. A temperature greater than 10°C is needed for this replication which is why the UK has not been at risk until the summer weather and the disease is expected to abate with the falling temperatures of Autumn. *Culicoides dewulfi* (the midges associated with BT8 in NW Europe) can fly into buildings, unlike some of the other midges.

The Disease

High temperature is typical as is swelling around the head and ears. The virus attacks blood vessels which then leak fluid leading to swelling. The head in sheep can be lowered because of the weight of the leaked fluid. Lameness can also be seen as the virus causes a reddening around the coronary band. In many cases erosions and ulcers are seen in the mouth (hence the similarity to FMD) with a lot of salivation. A blue tongue is seen in less than a fifth of cases. Signs are similar in cattle but milder. In a bad outbreak 30% mortality has been reported. However the Dutch experience is that BT8 has become more virulent and up to 70% mortality in sheep and severe disease in cattle has been seen.

The Treatment

Like all viral infections there is no treatment other than supportive therapy for the affected animal. Slaughter on humane grounds is common.

Prevention and Control

Live vaccines are effective, but have to be to the exact strain eg to BT8. An additional problem is that if a vaccinated animal is

carrying virus (cattle can carry it for 50 days, sheep 3 weeks) then the virus can become reassembled and emerge in a more virulent form. Dead vaccines are better, but none are available.

Disease spreads mostly late summer to autumn when midge populations are at their peak and then die off in the winter. Unfortunately infection can overwinter in cattle and sheep as well as midges, ready to emerge next spring. It is sensible to avoid major animal movements during the peak transmission time i.e. autumn, particularly cattle which act as the biggest host for infection. There has been limited success in controlling the midges' habitat and it is unlikely that the Environment Agency would approve wholesale spraying of water. Housing at night can be helpful, however the midge currently involved with BT8 will come into buildings.

Bluetongue does not affect humans so there are no human or public health implications.

Further information regarding Blue Tongue is available from your XLVet or visit...

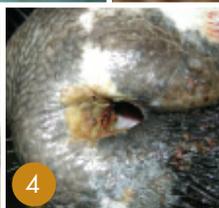
www.defra.gov.uk/animalhealth/bluetongue





1 Bluetongue case - clinically affected Highland cow. Extensive superficial erosion of the muzzle with a mucopurulent nasal discharge.

2 Bluetongue case - clinically affected sheep. Multiple haemorrhages on the surface of the third eyelid of the right eye.



3 Bluetongue case - clinically affected sheep. Thickening, reddening and multiple irregular shaped erosions at the top lip and along the dental pad.

4 Bluetongue case - clinically affected Friesian/Holstein cow. Focally extensive necrosis at the nostrils.

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Richard Matthews - Castle Veterinary Surgeons, Barnard Castle

If it is a sheep's most fervent ambition to die in the most dramatic way possible, then surely the next desire in its woolly head is to go lame. For many U.K. flocks lameness is an endemic problem and prevalence has probably increased following the change in weather patterns to mild winters and wet summers. Lameness is an important source of production loss and a welfare issue as well. Its prevention and control is time-consuming and requires a labour input which is not necessarily readily available on today's farms.

Foot•Lameness in SHEEP



The two commonest causes of lameness in sheep, scald and footrot are linked by a common cause, the bacterium *Fusobacterium necrophorum*, which is present in all ruminant faeces and therefore on any pasture grazed by sheep.

Scald occurs when the interdigital skin becomes infected by this bacterium, causing inflammation and pain. Unlike in footrot, there is no under-running of the horn. Factors causing the development of scald include wet pastures and long grass. These damage the interdigital skin and allow *F. necrophorum* to colonise the damaged area. Uncomplicated cases of scald will resolve spontaneously if the sheep are moved to dry pasture. Alternatively individuals can be treated topically with oxytetracycline spray, or on a flock basis, by footbathing in 10% zinc sulphate or a 3% formalin solution. Footrot vaccines are ineffective against scald.

Footrot starts as scald but requires the presence of an additional bacterium, *Dichelobacter nodosus*, which is found only on infected feet but can survive for 2-3 weeks on pasture. There are different strains of this bacterium which have varying virulence. The combination of the two bacteria causes separation of the horn from the underlying structures of the foot. Depending on the strain involved, this separation may spread across the sole and up the wall of the hoof.

Anyone who has trimmed a diseased foot will know that the disease is associated with a characteristic foul smell, which tends to stick to

the fingers! Treatment and control of footrot centres on footbathing, remedial paring, antibiotic injections and vaccination:

Footbathing in either 10% zinc sulphate or 3% (not stronger) formalin solution works well provided that the sheep are stood in the footbath for long enough (particularly important with zinc sulphate). Leave the sheep on hard-standing for at least one hour post footbathing and then ideally turn them onto fields that have been free of livestock for at least two weeks and hence are clean.

Both of the bacteria involved in footrot are anaerobic and so paring the feet to expose the infected tissues to the air will aid recovery. Keep trimming to a minimum and try not to cause bleeding. Disinfect hoof-trimming equipment between animals and sweep away hoof trimmings and dung from the trimming area between groups.

The footrot bacteria respond well to antibiotic injections such as Pen/Strep or Oxytetracycline. A single long-acting injection will cure most cases of footrot, but is expensive on a flock basis and gives no protection against reinfection.

Vaccination is an important part of a footrot control programme. Vaccinate sheep twice, 4-6 weeks apart, for maximum resistance and then give a booster dose before periods of maximum risk.

Vaccination can also be used to aid recovery from footrot, but vaccination alone will not

control footrot on a farm and must be part of overall control programme.

Some sheep will prove impossible to cure and repeat offenders should be culled, as they will simply re-infect their flock-mates. Susceptibility to footrot is inherited and so do not keep replacements bred from ewes or rams that are repeatedly lame with footrot.

Isolate any bought-in sheep, or sheep returning from eatage for at least 3 weeks and inspect them regularly for signs of lameness.

Eradication of footrot on a farm is possible through application of the above regimes but attempts to eradicate the disease under U.K. conditions which favour transmission of the disease often fail, and the cost of eradication can be considerable and must be balanced against the cost of endemic footrot in the flock.

A relatively new cause of lameness is Contagious Ovine Digital Dermatitis or CODD. This serious infection of sheep's feet is characterised by lesions that begin at the coronary band and then rapidly spread down the hoof, often causing the whole hoof to be shed leaving a raw stump. This condition fails to respond to orthodox treatments for footrot and you should seek veterinary advice if you think your flock is affected by this disease. On no account should affected sheep be footbathed with formalin because of the painful nature of the lesions.

Flockmasters are encouraged to discuss the foot health of their flock with their XLVet.

For many U.K. flocks lameness is an endemic problem and prevalence has probably increased following the change in weather patterns to mild winters and wet summers.





improving Fertility...



Peter Edmondson - Shepton Veterinary Group, Somerset

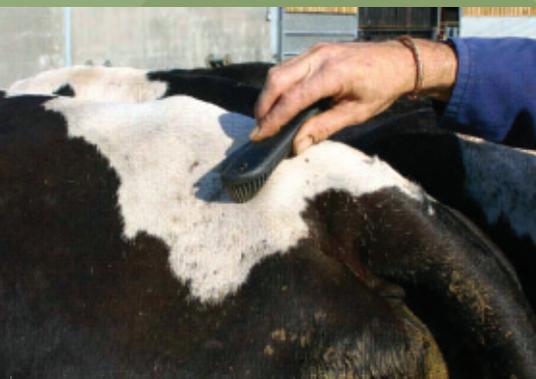
Peter Edmondson is one of seven dairy vets from Shepton Veterinary Group in Somerset, a member of XLVets. He is a RCVS Specialist in Cattle Health and Production.

Good conception rates are very important in the dairy herd and many farmers think that just because they may have a conception rate of 40 or 50%, they have good reproductive performance. However, if you have 100 cows and only end up sending 20, then no matter how good your conception rates are, you won't get many cows back in calf.

The key to successful reproduction is to get cows into a healthy state so they are clean and cycling after calving, catch them bulling and then have a successful service.

Figure 1 - Application of a typical Heat Detection aid such as ESTROTECT

Brush



Keep Warm



Apply



“ In this article I want to focus on getting cows clean after calving and heat detection. So how can this be achieved in practice? ”

Peter Edmondson - Shepton Veterinary Group, Somerset

Let's start with the calved cow. Our key is to ensure that she is clean post calving, and if there are problems let's identify these and tackle them early. I used to work in Saudi Arabia with large dairy herds and a postnatal check was carried out on every cow about 10 days after calving.

In our practice some farmers present all cows for a post calving check while others will present cows which have had difficult calving, twins, milk fever or retained foetal membranes. If you treat early you will maximise your success. There is nothing more difficult than trying to remove chronic uterine infections. By now we assume that the cow is clean and she should start cycling provided the diet and management is correct.

Years ago when cows came bulling they were easy to spot. Cows gave less milk, were under far less production stress and were in smaller herds. This has all changed due to market pressures, low milk prices and much larger dairy herds. High yielding cows may only be mounted three or four times when bulling and this makes the challenges of catching cows far more difficult. So how can we improve this?

Make sure that all your cows have a clear freeze brand or identification. Involve all farm staff in heat detection to maximise observations. This includes tractor drivers as well as stockmen. Use a notebook to record this information and do not rely on your memory, it's easy to forget or to give the wrong cow number. You need good communication between staff so that this information is transferred at the correct time. There is no point a tractor driver telling the stockman that a cow was bulling two days ago.

We recommend that all heats are recorded, even if they occur a few weeks after calving. A bulling cow is a cow that is cycling and is a very healthy sign. We can use this information to predict when cows will come bulling again.

We can't be with cows 24 hours a day and so we will miss heats. Bulling activity is

intermittent and so a longer observation period increases detection. Cows don't show signs when other activities are going on such as milking, feeding. Up to 70% of heats occur at between 6 pm and 6 am, when staff are away. Half of cows show signs for 6 to 12 hours but a quarter are bulling for less than 6 hours.

The average heat detection rate in the UK is about 35%, so if we have 100 cows which are cycling, then we are only picking up one third of these. Heat detection aids will help improve this and there are a variety of products on the market. You can use tail chalks or paint, Kamar type products where a red dye is released once a cow is mounted or the new Estroprotect scratch off patches that are self adhesive and have a silver layer which is removed over time to reveal more colour and can pick up limited mounting activity.

All heat detection aids have their advantages and disadvantages. I want a device that stays on the cow, and doesn't fall off. I like colours that can be easily seen, it's amazing how many people are colour blind and so a choice of colours is a real advantage. Something that shows more than one mount is useful to gauge true standing heat and avoid 'false positives' is also beneficial.

Heat detection aids should be used on all cows which have not been served by a certain number of days after calving, and this will depend on the calving pattern and individual herd-breeding plan. They should also be used to identify cows which may return to service, and so they should be applied about two weeks after insemination. We also use aids on all cows which have had any veterinary treatments to bring them bulling.

We have some herds which use pedometers to measure activity. This rises when cows are bulling and so is another aid. We have also vasectomised bulls with chin ball markers so that they pick up cows in heat.

It is not advisable to rely on heat detection aids only to identify cows bulling. You need to use

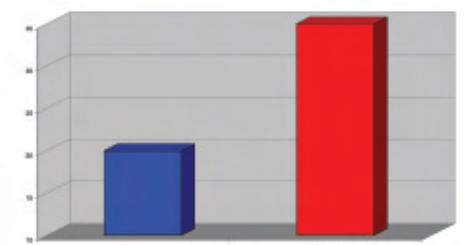
observation, heat detection aids and records to make balanced decisions. We have found in our practice that the detection rates can increase to between 60 and 70% with heat detection aids.

So, let's take a herd with 100 cows which are ready for service with a 50% conception rate. If the herd has a 40% heat detection rate, 40 cows will be served and 20 of these become pregnant. If we use heat detection aids and increase the rate from 40 to 70%, we are now serving 70 cows and 35 of these will become pregnant. Figure 2 compares the difference as we now have 35 compared with 20 pregnant cows, or 75% more in calf! That's why a good heat detection rate is essential to good reproductive performance, especially as conception rates are declining.

There are other factors which can influence heat detection and some of these are listed here; lame cows do not come bulling, negative energy balance will disrupt cycles, cows need space to show oestrus activity, they need to be on a surface where they will not slip, well lit buildings, very hot or very cold weather will reduce activity, and a low number of cows bulling will reduce the amount of activity.

Good fertility is down to a combination of factors and a team effort. Heat detection is vital to maximise the number of cows presented for service. If we have poor heat detection, no matter how good our conception rates are, reproductive performance will be disappointing.

Figure 2

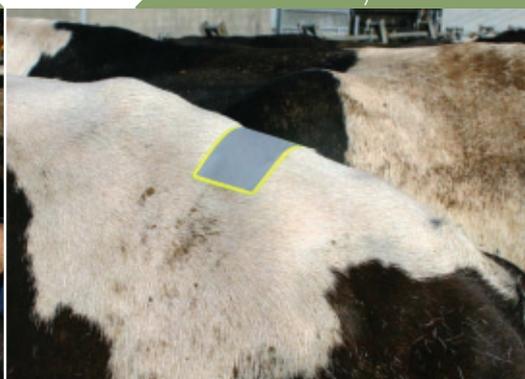


Source: Shepton Vet Group, Somerset, UK- Figures based on an average of 20,000 cows

Press down firmly



Ready



Activated





ENSURING A HEALTHY HERD MEANS HAVING A PLAN IN PLACE TO KEEP CAMPYLOBACTER OUT...

Campylobacter *foetus venerealis*

The organism *Campylobacter foetus venerealis* is one of the many potential causes of bovine infertility and abortions. Formerly known as vibrio, it is transmitted from cow to bull to cow at serving. The incidence of this disease had fallen dramatically as a result of the widespread use of AI but over the last few years, the numbers of cases seen have been rising, particularly in beef suckler herds, because of a greater reliance on the use of hired bulls and because of a lack of basic biosecurity precautions.

Ideally all replacement breeding stock, both heifers and bulls, should be virgins (which cannot, by definition, be infected).

Signs of infection

In the cow, the organism lives in the anterior vagina and cervix. From here it can invade the uterus causing an endometritis and early embryonic death or later abortions.

The classic signs of infection within a herd would include a slight, cloudy vaginal discharge about ten days after serving, irregular and abnormally long inter-oestrus intervals and abortions at between five and seven months of gestation.

Usually, given time, an infected cow will mount an immune response and eliminate the infection. This usually takes five or six months but occasionally may take longer. In some cases however, the endometritis and the damage that it causes may be so severe that the cow remains infertile and barren.

In the bull, the organism lives in the folds and crevices of the prepuce where it can persist for life.

Diagnosis

Diagnosis of *Campylobacter foetus venerealis* within a herd is not always easy. Definite confirmation of infection can only be obtained

by culturing the organism from either preputial or vaginal washings. However, due to the delicate nature of the organism, false negative results may be obtained. An alternative method of diagnosis is to demonstrate specific *Campylobacter foetus venerealis* antibodies in samples of vaginal mucus.

For reliability of results, samples from a dozen or more cows are required, which makes testing expensive.

Once the presence of *Campylobacter* within a herd has been confirmed options for its control or elimination are limited. There are no licensed vaccines against this disease in the UK. If the organism can be isolated, autogenous vaccines can be produced but vaccination will only allow the disease to be controlled, and not eliminated from the herd.

The only way of possibly eliminating this disease from an infected herd is to cull the bulls and then to use AI instead of natural service for at least three years.

Biosecurity

So, given the problems that *Campylobacter foetus venerealis* can cause, and the difficulty



in eliminating it from an infected herd, great care should be taken to prevent its introduction.

Ideally all replacement breeding stock, both heifers and bulls, should be virgins (which cannot, by definition, be infected) and should only be sourced from reputable suppliers who will guarantee this.

Since replacement bulls are not normally virgins, they should be subjected to a thorough sheath washing using an antibiotic solution on three consecutive days in an attempt to ensure that they are not carrying *Campylobacter foetus venerealis*.

Certainly, the use of hired bulls should be avoided. If, however, this is not possible, then sheath washing as described above becomes even more important.

Case Study: 160 spring-calving suckler cows

This case involves a farm running about 160 spring-calving suckler cows. Replacement heifers were always sourced as week old calves and reared on the farm.

But each year, four bulls were hired and each ran with a group of forty cows for ten weeks in the summer. No biosecurity precautions were taken before introducing the bulls to the cows. Typically this herd achieved a satisfactory reproductive performance with, on average, a 90% pregnancy rate, as diagnosed in PD tests each November.

However, one November, routine PD-testing showed pregnancy rates achieved in three of the four bulling groups ranged from 85 - 93% as expected, but the rate achieved in the fourth group was only 17%.

From the fourth group, six vaginal mucus samples were collected from empty cows and submitted for testing. Results confirmed the presence of *Campylobacter foetus venerealis* infection. Unfortunately, by the time these results became available all four groups of cows had been mixed and no records had been kept on which cows had been in which group. So it had to be assumed that the whole herd was now infected with the disease.

To eradicate the disease from the herd, a complete change in management and

breeding was required. Over the next three years, infected animals were to be inseminated using oestrus synchronisation and AI.

It was assumed, and later proved, that the heifers (being virgins) remained free of *Campylobacter* infection. These animals were separated and kept as an uninfected herd to which replacement heifers were added each year. Natural service was used after purchasing a bull and having him sheath washed. Pregnancy rates achieved in this group over the next three years were as expected.

In the main herd of infected cows, oestrus synchronisation and AI in the first year resulted in a pregnancy rate of 45%. Sixteen cows were still empty after being served twice and were culled.

In the second year, a management decision was taken not to re-serve any cows that returned to oestrus and to accept that a high proportion of the animals served would not be pregnant. A pregnancy rate of 45% was achieved again and the remaining empty cows were culled.

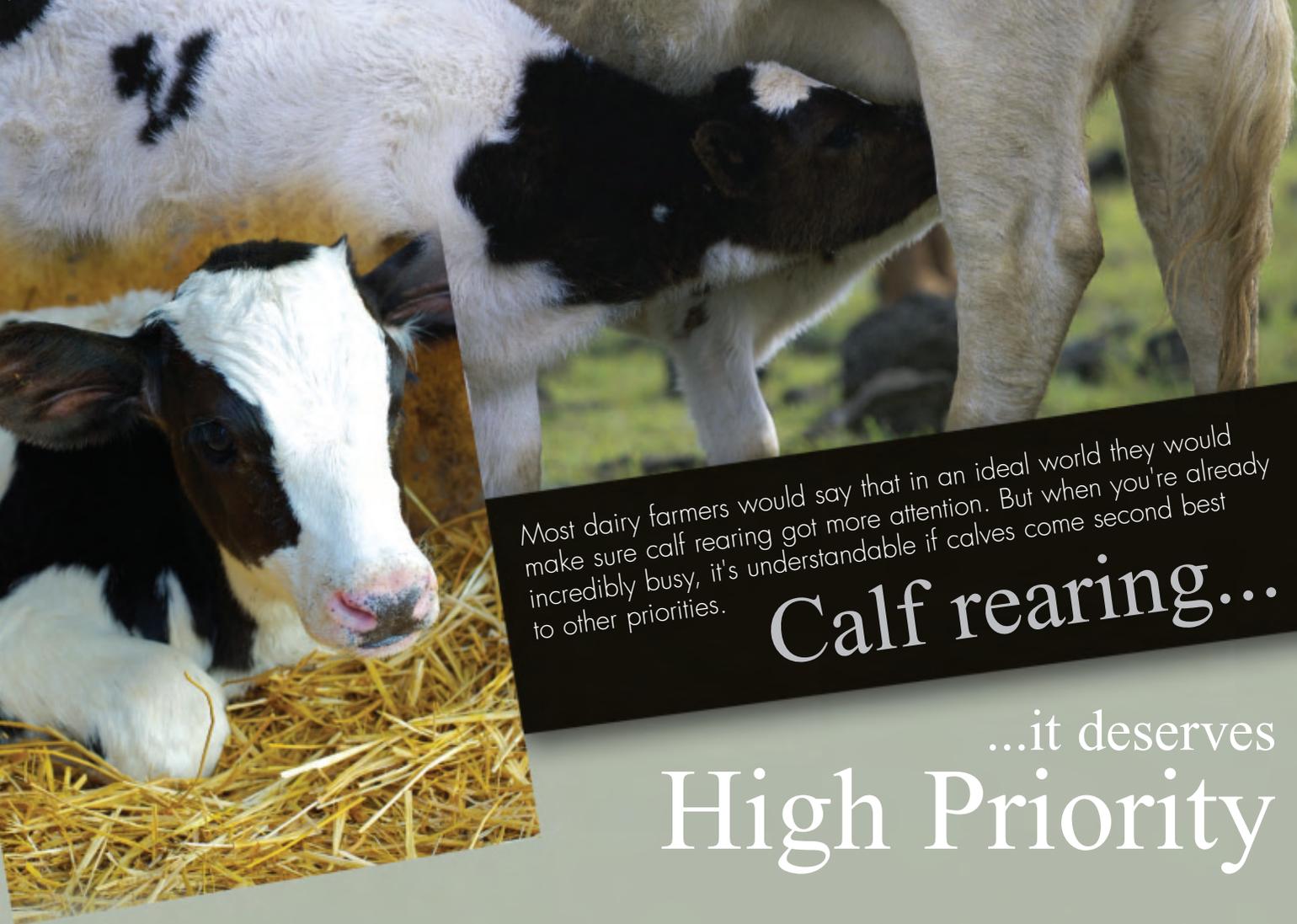
In the third year, with only 16 cows remaining from the *Campylobacter*-infected herd and with the herd now 'in conversion' to achieve an organic status, a management decision was taken not to pursue oestrus synchronisation and

AI further but to cull these 16 cows thereby returning the whole herd to a *Campylobacter*-free status.

Having eliminated *Campylobacter* infection, the herd was returned to the practice of using natural service and achieved similar reproductive performance to that achieved prior to the introduction of *Campylobacter foetus venerealis*. Bulls are now purchased and not hired, and full precautions are taken in an attempt to prevent the reintroduction of *Campylobacter foetus venerealis* (and introduction of any other infectious agents) into the herd.

The introduction of *Campylobacter* into the herd and the efforts to eliminate it incurred huge economic losses due to reduced production, and increased culling, semen and drug costs, as well as extra time spent handling the cattle.

This case study highlights the importance of keeping good herd records and observing biosecurity precautions. If the groups had not been mixed until the test results became available, this problem could have been limited to 40 cows and not the whole herd. If hired bulls had not been used or if appropriate biosecurity precautions had been taken, the incident may never have occurred at all.



Most dairy farmers would say that in an ideal world they would make sure calf rearing got more attention. But when you're already incredibly busy, it's understandable if calves come second best to other priorities.

Calf rearing...

...it deserves

High Priority

This doesn't mean you don't care. Indeed, the majority if not all dairy farmers recognise that heifer calves are their dairy herd's future. They have the best genetics and represent a major and complex investment of money, time and emotion. So when this goes wrong - with an outbreak of calf pneumonia, for example - it can be a serious setback to the long term payback from that investment for at least three reasons:

- Some calves never recover fully, even if they return to looking normal. Their lungs are scarred for life and their productivity reduced.
- The damage is not always confined to the sick animals. Other calves in the group may appear unaffected, but research has found that apparently healthy house-mates of

calves with pneumonia can also suffer long term lung damage.

- Sick calves cost money and time for their treatment.

If you really believe that prevention is better (and cheaper) than cure, then there are four things you should be doing:

Colostrum - make sure every calf gets three litres of colostrum (ideally its own mother's) within six hours of birth. After this time, the calf's gut lining changes such that the large antibody molecules in colostrum can no longer be absorbed into the calf's bloodstream, seriously reducing its immune protection during the crucial early weeks.

A dry bed - who would want to sleep on a damp bed? Quite. Calves are no different.

Clean, fresh air - who would want to breathe foul air? Exactly. Make sure your calves aren't breathing their own stale air. Also make sure they aren't breathing other animals' stale air from the shed next door. And good ventilation means your calves aren't living in a draught either. Simple smoke tests can be done in different weather conditions to check how well air moves through a building

Early protection from pneumonia viruses - a range of vaccines are available that provide protection from the major viruses and bacteria.

To discuss any aspect of calf health, please call your XLVet. Don't put it off, call today for their sakes (the calf's, not the vet's).

Invest in health. Don't pay for disease.



With a number of BVD eradication schemes happening across the UK, XLVet member Luke Knowles from Farm Veterinary Solutions in Rutland, decided it was time to get things going.



BVD Eradication

BVD: What are you doing about it?

'After being inspired by other eradication programmes being run in this country and with help from Prof Brownlie at the Royal Vet College, I decided to think big and eradicate BVD from the smallest county in England - Rutland.

With just over 50 cattle holdings, both small and large, hobby and commercial it would give us an idea of the ease of operating an eradication scheme and the type of uptake we could hope for if running the project in other areas.

Any eradication scheme is a long term programme and over the next 12 months we hope to have convinced the majority of farmers that screening their herds for BVD virus can only be a good thing. If Rutland can eradicate BVD from its cattle and keep it out, there is nothing to stop other areas doing the same thing.' To learn more about the eradication schemes for BVD and to discuss how to ensure you protect your herd from the effects of BVD virus, please contact your vet today.

If Rutland can eradicate BVD from its cattle and keep it out, there is nothing to stop other areas doing the same thing...



...All the way from Penzance to Beyond John o'Groats

Welcome to Northvet...

With member veterinary practices across England, Scotland and Wales, XLVets is delighted to welcome the Northvet Veterinary Practice based in Orkney as the latest member to the group. The Orkney Islands are one of the most densely populated areas for beef cattle in Europe and the practice team has gained considerable experience and understanding in the control of BVD as a result of the Orkney BVD Eradication scheme. The Northvet practice team and their clients are most warmly welcomed to XLVets.

Left: The Northvet 9am roll call

From left to right Andy Cant (Vet - who has grown a beard especially for his trip to 'Up Helly Ah' at the end of January) about to repair cruciate on a dog, Lynn Wilson (Practice Manager) keeping the whole team organised, Iain McCulloch (Vet) about to carry out some LMC health plans, Heather Ramsay (Vet) about to do a TB test, Gemma McGowan (ACA) about to help operate on the dog, Margaret Thomson (VN) about to do a whole herd Johnes blood test, Kirsten Kemp (Receptionist) about to get back inside out of the rain. Missing from the photograph are Alan Wilson (Vet) who was attending to a dog in the surgery, John Dearnsey (Vet) who works nights, Bob Norquay (Vet) who had gone to see a flat out heifer. Other members of staff were on holiday, somewhere else or simply hiding from the camera!



Congratulations to Keith Cutler from The Endell Veterinary Group, Salisbury on winning The Farmers Weekly Livestock Adviser of The Year 2007

Keith was shortlisted for the Award along with David Black, managing director of XLVets, and SAC's John Vipond.



The three candidates were then interviewed by a panel of judges: BVA past president David Catlow, and from Farmers Weekly, livestock editor Jonathan Long, and reporter Emily Padfield.

The judges were particularly impressed with Keith's proactive approach to gaining business from existing clients, and the fact that he followed up visits with written reports to explain more complex subjects for his clients. Also it was clear that he was respected by his peers, and provided inspiration and support for younger colleagues. Keith said he was 'chuffed' to win the award and that it vindicated the hours of hard work he put in, particularly the time he spent helping out young vets.

He also viewed the award as one gained not just through his own efforts, but made possible only with the support of his clients, his colleagues at the practice - the other vets, office staff, and lab staff -

and the wider XLVet network. It was an award for teamwork and taking the team approach.

David Black of Paragon Vet Group in Cumbria, and MD of XLVets was a runner up. David's inspirational work with XLVets was recognised by the judges who commended him for his novel ways of interacting with clients, encouraging uptake of new technologies, and promoting co-operation between vet practices for the good of the sector. Keith Cutler received his Award, sponsored by Silotite, at an evening ceremony at the Grosvenor Hotel in London, attended by over 900 people.

The event celebrated the very Best of British Farming, and demonstrated that despite the extra challenges in farming this past year, there are still enthusiastic and pioneering people in the industry who are positive role models for the future.

Keith Cutler

Congratulations Wiltshire XLVet

...is voted livestock adviser of the year

The logo for The Endell Veterinary Group (EYG), featuring the letters 'E', 'Y', and 'G' in a stylized, green, serif font. The 'Y' is positioned between the 'E' and the 'G', and all three letters are interconnected. The logo is set against a white circular background.

