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SUMMER EDITION 2014

Livestock MATTERS

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Inside this issue:

BVD Special...

Busting the myths and tackling the facts.

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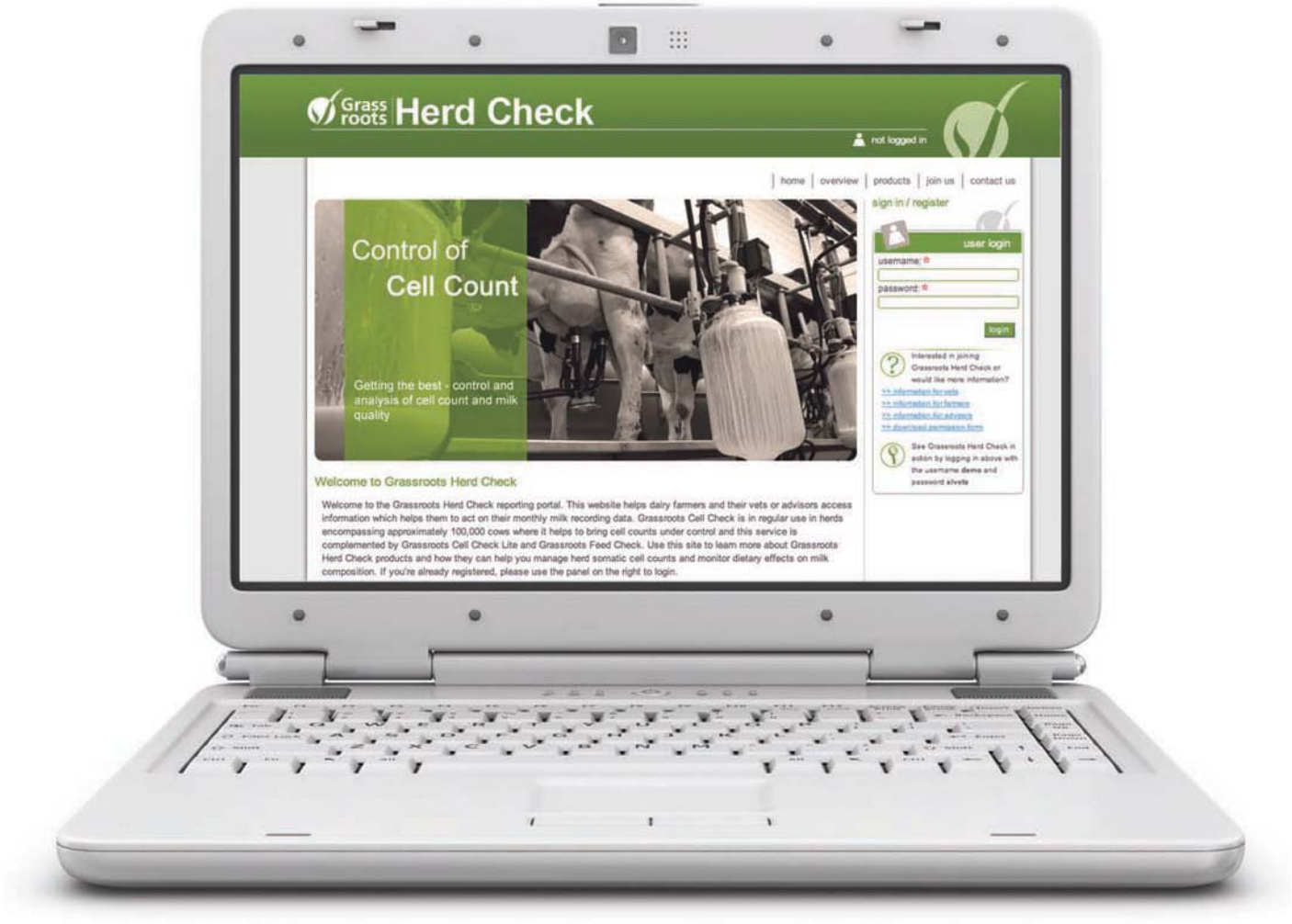

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XLVets is a novel and exciting initiative conceived from within the veterinary profession. We are all independently owned, progressive veterinary practices located throughout the United Kingdom committed to working together for the benefit of our clients.

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Livestock Matters is published by:
XLVet UK Ltd, Carlisle House
Townhead Road, Dalston
Carlisle CA5 7JF
Tel: (01228) 711788
*This publication is supplied free of charge to farm clients of XLVets member practices.

THE EDITOR

Welcome to the 'Summer' issue of Livestock Matters

In this issue we focus on infectious diseases; with the national XLVets BVD Free initiative now running we look at how the disease is transmitted and the practical steps that can be taken to reduce the potential for the disease to spread. BVD is just one disease XLVets will be featuring in the 'Make your farm your fortress' campaign that will launch at the Livestock Event.

We also have a report from one farm where dairy herd performance was suffering and, following a series of investigations, two strains of Mycoplasma were found to be at the root of their problems. We see how a custom-made vaccine was developed to solve the issue and restore the health and performance of the herd. Finally we take a look at parasites in sheep; focusing on those to look out for now and in the coming months, with advice on treatment options.

XLVets and FarmSkills will once again be exhibiting at the Livestock Event, taking place on 2nd and 3rd July, come along and see us on Stand AH-97. We will also be at the National Sheep Event at Malvern on 30th July, where visitors will have the chance to speak to XLVets vets who are on-hand to discuss any aspect of sheep health. Come along and try one of the challenges on offer at either event, for your chance to win one of the FarmSkills green buckets!

We hope you enjoy this issue.

Joanne Sharpe XLVets

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XLVets launches a calf testing initiative to offer a significant step forward in UK-wide BVD control

Nationwide eradication of Bovine Viral Diarrhoea (BVD) - one of the most profit-draining infectious diseases of cattle - moved a significant step closer with the launch of a new calf testing and monitoring scheme at Beef Expo.

Visitors to the XLVets stand at the event were given the opportunity to learn about the scheme and how it could benefit them in the control and removal of BVD infection on their farms.

The animal health seminar at Beef Expo also generated a lot of interest and there was a good attendance from farmers and industry people on the day. Jenny Hull from XLVets Alnorthumbria Veterinary Group provided an excellent update on BVD in this seminar session; including looking at how the disease spreads, and how it can be identified and controlled. Jenny also provided an update on some of the activities that have taken place in England in tackling this costly disease and gave an overview of the new XLVets BVD Free initiative, which incorporates CHECK TAG BVD.

With essential critical mass from the outset provided through the 53-strong UK-wide group of XLVets veterinary practices, CHECK TAG BVD will promote the testing of calves and provide verification of a negative test result for the disease through a central and fully accessible online database. CHECK TAG BVD is simple to use; a sample is taken during the normal tagging of new-born calves, or alternatively pre-movement.

Significantly, the scheme will include the use of branded white tags as part of the testing procedure in order to provide an easily identifiable and highly visible prompt for calf buyers to check test results before purchase.

As Dan Humphries of member practice Lambert, Leonard and May explains, the main aims of CHECK TAG BVD is to improve the identification of source farms and reduce the risks of persistently infected (PI) calves moving from unit to unit, thereby stemming the spread of the disease.

'BVD is primarily spread by PIs, which are calves born from cows that are infected with BVD,' says Dan. 'These PI calves often appear normal but will spread infection to other cattle that they come into contact with. It's therefore critical that we remove these animals from the breeding herd and also ensure that they are not sold into other herds.

'By identifying PIs, ideally shortly after birth and certainly before they move from their home unit, we can minimise the spread of BVD and also offer more targeted control programmes in herds that are identified as infected.'

The scheme is entirely voluntary with farmers first having to make the decision to use the tissue sample testing technology to initiate the process. The white CHECK TAG BVD tags are available from a number of tag suppliers, with tissue analysis either done by the vet practice or through a central laboratory, depending on the type of tag used. The cost is approximately £5-6 per tag, which includes the laboratory testing.

Once calves have been tagged and tissue samples analysed, results will be recorded via the farm's XLVets practice onto a central CHECK TAG BVD database; www.bvdcheck.co.uk. This database - which is accessible from a computer or smart phone - will provide verification of all registered calves testing negative through the scheme.

'The scheme is effectively being piloted on a significant scale through XLVets member practices, but any farmer (not only clients of XLVets practices) will be able to access the database from the outset,' adds Dan. 'The ultimate aim is that all practices will have the option of participating in the scheme, with the database being hosted independently, thereby allowing the branded white tag to become a universal symbol to promote BVD awareness and prompt positive action to remove PIs.'

Dan Humphries, Lambert, Leonard & May


Jenny Hull, Alnorthumbria Veterinary Group

Castle Vets on TV

XLVets member practice Castle Vets, recently featured in a new 15-part fly-on-the-wall documentary on the BBC.

The series followed the life of rural vets; covering farm, equine and small animal work at the practice. The production crew were with the practice for three months, filming hours of footage, covering a wide variety of cases. Well done to all involved at Castle Vets.

Castle Veterinary Surgeons

Nottingham careers fair

XLVets members Paul Verney - Severn Edge, Steve Smith - Midshire, Alun Beckett - Larkmead and Chris Parker - Scarsdale, all kindly gave their time to assist in the manning of the XlVets stand and sitting on the 'quiz the boss' and 'new grad' panels.

Kate Southorn - Scarsdale (not pictured) also delivered a presentation on 'the breadth of a career in equine'. Another successful and informative event.

Thanks to all concerned!

CALWETON FARM

Veterinary surgeon	Miranda Macinnes
XLVets practice	Calweton Veterinary Group

MIRANDA MACINNES, CALWETON VETERINARY GROUP

Getting to grips with BVD; busting the myths and tackling the facts

The cost of Bovine Viral Diarrhoea (BVD) is not hard to understand - despite its name, BVD causes a wide range of problems including extended calving intervals, abortions, subfertility in bulls, scour and pneumonia in calves. This makes it one of the most profit-draining infectious diseases of cattle.

What's more surprising is the lack of progress, given that there has been a highly effective vaccine available for nearly two decades.

Through compulsory measures, countries including Scotland, Ireland and much of Europe have made great strides towards eradicating the disease. England to date has not had such a scheme; however, this shouldn't stand in the way of England becoming BVD Free - something which is necessary if our cattle are to keep up with the rest. Whether you breed cattle or buy youngstock, you cannot afford to ignore it.

One of the biggest hurdles seems to be the myths associated with BVD. These include:

1. **PIs.** What are they exactly?
2. **I vaccinate, therefore BVD isn't a problem.** Unfortunately, this is often not the case.
3. **I don't breed cattle, therefore I can't do anything about BVD, right?** Wrong again.

It's important to realise that the approach to BVD will not be the same for all farms; the XLVets BVD-Free campaign provides advice that will be appropriate to YOUR farm, however it is set up.

So now for some myth-busting…

PIs. What are they exactly?

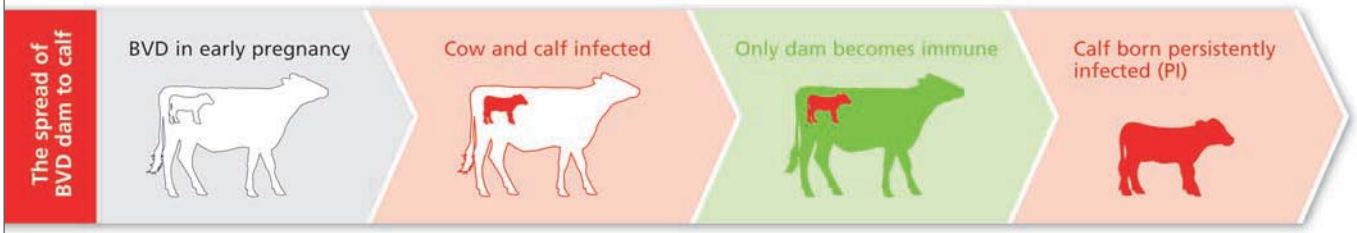
A PI is an animal that is Persistently Infected (PI) with BVD virus (BVDv). If a cow is exposed to BVDv for the first time during early pregnancy, she may abort. Alternatively, the calf may continue to develop, and although the cow will develop immunity, the calf will not. As a result it will be 'persistently infected' with virus; a PI. These calves frequently fail to thrive and die young, sometimes of 'mucosal disease', but until this point they will continually shed huge amounts of virus. BVDv suppresses the immune system of all animals in contact, and as a result a whole host of diseases can become much more prevalent. In addition, PIs will maintain infection on the farm, making control and eradication of the disease difficult.

It is important to remember, an animal cannot become a PI, it can only be born a PI. PI status is for life and vaccination will not prevent it from shedding virus. Don't forget also, that a PI which survives until breeding age will always give birth to a PI.

Therefore any attempt to free your farm of BVD must involve the removal of PIs from the herd.

PI facts

- PIs continually shed huge amounts of BVD virus
- An animal cannot become a PI, it can only be **born** a PI
- Once a PI, **always** a PI - vaccination will make no difference
- A PI cow will **always** give birth to a PI calf

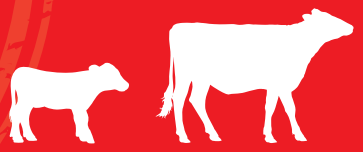


I vaccinate, therefore BVD can't be a problem... or can it?

Theoretically, the birth of PI calves can be prevented by vaccinating cows against BVD before they are served. However, herd vaccination is not a fail-safe approach.
Reasons for this include:

- Incorrect timing of vaccination - in particular, heifers must have finished the primary vaccination course before they are served.
- Incorrect storage, or administration, of vaccine.
- Concurrent disease (e.g. mastitis) means a cow may fail to respond to the vaccine.
- Vaccinating a PI is of no benefit - PI status is for life, and a PI will always give birth to a PI.

It is a sobering fact that a great number of herds that vaccinate for BVD will have active disease on the farm. This is not to say that vaccination is unhelpful; vaccination plays an important role in the control of BVD, but it is not enough on its own. Attempts to become BVD free through vaccination alone will fail, unless PIs are removed from the herd.



I don't breed cattle, therefore I can't do anything about BVD... or can I?

Buying in cattle inevitably carries the risk of buying in various diseases, but steps can be taken to minimise the risks. In terms of BVD, as highlighted above, purchasing youngstock from a vaccinated herd is not a fail-safe approach. You do NOT want PIs on your farm - even if they are not obviously stunted, they will prevent the rest of the group from developing to their full potential.

As it is not possible to tell that an animal is a PI just by looking at it, laboratory tests are required - either a blood test, or a tissue-sampling tag. The XLVets BVD Free campaign supports the use of BVD CHECK TAGS; uncomplicated ear tags which harvest a sample for virus-testing, either during the normal tagging of new-born calves, or alternatively pre-movement. The branded white tags provide an easily identifiable and highly visible prompt for calf buyers, and test results can be checked via an online database www.bvdcheck.co.uk before purchase.

Checking the BVD status of purchased animals shouldn't only concern youngstock buyers - the above applies to all incoming stock, not least for bulls. A bull will come into contact with the entire breeding herd, so if he is carrying infection or is a PI, the effects can be devastating. Exposure of an adult, non-PI bull to BVD virus can be equally problematic, as the high temperature that may develop as a result can cause a reduction in semen quality for as long as two months, by which time the breeding period may be over. Virus may also be shed in the semen for an extended period.

Don't let BVD hold you back; join the XLVets BVD Free campaign - it's time to take control.

A custom-made vaccine helps restore health and performance of a dairy herd with Mycoplasma infections

Veterinary surgeon	Colin Lindsay
XLVets practice	Capontree Veterinary Centre

Cumbrian dairy farmer **Duncan Maughan** and his vet **Colin Lindsay** of Capontree Vets had been puzzling over why the herd was performing so poorly despite a series of investigations and changes in management and nutrition.

Eventually, a series of events led to the discovery of not just one Mycoplasma infection but two - M.bovis and M.wenyonii. An autogenous vaccine could be made to give cows protection against M.bovis but not M.wenyonii. However, this single Mycoplasma vaccine has helped to restore health and performance of the herd.

Grumbling poor performance

At Gateshaw Mill near Carlisle, Duncan Maughan had been buying in cattle from multiple sources. By September of 2012, he had brought the herd number up to 200 milking cows.

But during the summer of 2012, the herd suffered a number of abortions and poor fertility. Investigations revealed the presence of BVD, and through a herd screen, a PI animal was identified and culled, and a BVD vaccination programme started.

However, herd performance was still poorer than expected - despite improvements to herd nutrition and treatment for fluke infection. Over the winter of 2012/13, Colin and Duncan worked together and reviewed herd management, heat detection, bull fertility, nutrition and even AI technique.

'Cows didn't want to come into the parlour - so we even checked it for stray voltage but still couldn't find anything wrong,' explains Duncan.

Clinical outbreak

Then in April last year, Duncan experienced a catastrophic 24 hours: 'I called Colin after the evening's milking. Cows had gone acutely lame, milk yield had fallen dramatically, and they had blotchy skin on their udders.'

Colin adds: 'When I got to the farm, many cows had red swollen teats and udders. A large proportion of the herd was stiff and lame - the fetlock and hock joint were swollen to the point that some cows couldn't even get up.'

Over the following days, more cows deteriorated, and did not respond to antibiotics. Mastitis cases also increased and failed to respond to antibiotic treatment.

Duncan Maughan Gateshaw Mill

Two cows were sacrificed so that tissue samples could be sent to the laboratory. Joint fluid was also taken from a calf. Colin suspected the cause was the bacterium Mycoplasma bovis and specifically asked for this to be tested for. He was right.

'I'd made sure the laboratory kept the isolate, and asked them to make an autogenous vaccine. This would be specific to the strain of M.bovis found on the farm, and should have resolved the problem.'

But it didn't. Mastitis cases continued with cows failing to respond to treatment.

More tissue and fluid samples were taken and a second Mycoplasma species was identified; M.wenyonii. Colin adds; 'On its own, this bacterium is simple to treat. But the presence of the two species explains why it was so hard to get to the cause of the herd's poor health and performance. Unfortunately the autogenous vaccine could only be made up against M.bovis and not M.wenyonii. So after consultation with the VLA, we made the decision to give the cows as much protection as possible and go ahead with the autogenous vaccine for the one infection, in the hope that they would then be able to better cope with the M.wenyonii infection.'

Health regained

As soon as the vaccine had been made, and passed its safety tests, Duncan vaccinated everything alive on the farm that day. After that, all new calves were treated at four weeks of age.

The day the herd was vaccinated, Duncan saw no response and was ready to cull the whole herd and start again. But then a week later, he started to see marked improvements in calf vigour and viability.

'It gave me hope' says Duncan: 'And over the following months, the joint ills improved and cows started to come into the parlour more willingly without the sore udders. We are finding that cows are regaining their production levels once they've been dry and calve again.'

In all, Duncan lost 105 cows due to Mycoplasma infections and related symptoms.

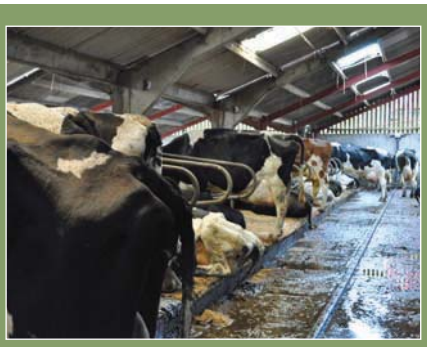
Colin adds: 'Looking back on that time, Duncan had been trialling a mycotoxin binder in his silages, and the trial finished at the end of February 2013. It's possible that removing these binders, increased the toxin challenge and pushed cows "over the edge" into clinical disease.'

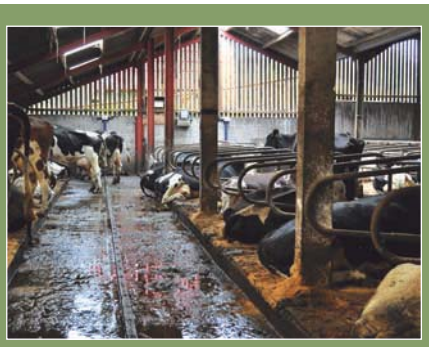
Going forward

Today, the farm has just over 120 milking cows and the herd will be kept closed from now on. It is vaccinated against IBR and leptospirosis, however as the herd is housed, it will be monitored for BVD, but not vaccinated. In order to maintain control of the Mycoplasma infections, the herd will be receiving six-monthly booster vaccinations of the autogenous M.bovis vaccine.

Colin adds: 'It's not expensive to make an autogenous vaccine - especially not when you consider the health benefits. It works out at a few pounds per dose, and then we also have to apply for a licence which costs £120 and lasts for 12 months. Towards the end of this period we get more vaccine made up if needed, so we get a second year's supply without another licence.

Calves at Gateshaw Mill





Cubicles on the left have yet to be modified, but cows are happy to lie down in the modified cubicles on the right

Duncan monitors daily milk yields

About Mycoplasmas

Mycoplasmas are a type of bacterium which can cause disease in farm animals and humans. There are more than 120 named Mycoplasma species, and the majority are host-specific.

M. bovis is the main Mycoplasma species identified from sick cattle in the UK. It causes respiratory disease, ear infections, arthritis, mastitis, and is associated with eye infections, abortion and infertility. It is a major contributor to calf pneumonia, and is spread by direct nose to nose contact, aerosol and in milk. There are no commercial vaccines available to prevent this disease, but there are licensed antibiotics for its treatment.

Mycoplasma wenyonii is much rarer. Infections caused by this bacterium have been reported to result in blood infections, anaemia, fever, hind limb oedema (swelling) and significantly reduced milk production. It is thought to be spread via saliva, biting flies, lice, and possibly communal needles. Again, no commercial vaccines are available but cases can be successfully treated with antibiotics.

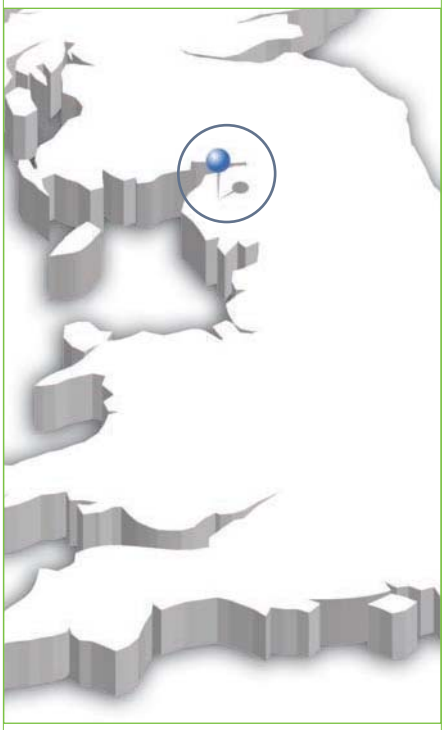
Autogenous vaccines

In cases of disease where a commercial vaccine is not available, then a custom-made, or autogenous, vaccine can be made. These tailored vaccines are specific to the herd/flock or location and are not permitted for use elsewhere. They are made from cultures of the pathogenic micro-organisms which are isolated from the site of an infection. As they take a few months to manufacture and test, they are only useful in situations where disease is chronic or recurrent.

ROD WELFORD, MILLCROFT VETERINARY GROUP

Exploring the external parasites in sheep

The significant external parasites in sheep in the UK, often termed ecto-parasites comprise lice, blowfly, headfly, ticks and sheep scab. Knowing the parasites in your flock not only ensures that the correct treatments can be used, but also allows you and your vet to put suitable control programmes, along with biosecurity measures in place to minimise the welfare and economic concerns these parasites cause. Here's a guide to what's out there and the treatment options available.



Veterinary surgeon	Rod Welford
XLVets practice	Millcroft Veterinary Group

Blowfly strike (maggots)

Blowfly strike is the infestation of living tissues with the larvae of the flies Lucillia sericata (greenbottle), Phormia terrae-novae (black blowfly), or Calliphora erythrocephela (bluebottle) and typically occurs from late spring to early autumn in the UK.

Egg laying Lucillia or Phormia female flies are attracted to fleece contaminated by urine, faeces, decaying organic matter, or excessive sweating. Hatching of larvae occurs within 24 hours of egg deposition under optimal conditions with the subsequent invasion and digestion of the underlying tissues. The wool in such areas takes on a brown appearance, and the resultant characteristic foul smell attracts a secondary wave of blowflies, which may then include Calliphora flies.

Untreated sheep die an unpleasant death, usually due to toxaemia as a result of absorption of toxic breakdown products in conjunction with secondary bacterial infection.

Headfly

The headfly Hydrotea irritans can present a significant challenge to sheep at pasture during the summer months. Often gathering round the sheep's head in large swarms, the irritation produced by the feeding of adult flies on nose and eye secretions, wounds, or at the base of the horn in horned sheep, can cause the sheep considerable annoyance and distress. Head-shaking and ear-flicking are often observed, while scratching with the hind feet and head-rubbing further traumatise the skin. This merely serves to attract more flies and sometimes loss of large areas of skin from the head results. Secondary infestation with blowfly larvae may also arise.

Fly control

- Regular application of synthetic pyrethroid (SP) pour-on during high risk periods is the treatment of choice for headfly.
- Plunge dipping in SP or organophosphate (OP) dip can provide protection against blowfly strike for 3-8 weeks.
- Application of SP pour-on should provide protection against blowfly strike for 6-10 weeks, depending on the product used.
- The insect growth regulator pour-ons cyromazine and dicyclanil provide protection against blowfly strike for 10 and 16 weeks respectively.
- Implementation of gut worm control strategies in accordance with SCOPS principles[1] should reduce faecal contamination of the fleece, and thus incidence of blowfly strike.
- Environmental control of flies, particularly around farmyard areas can also be tackled.
- Regular dagging or crutching of sheep remains an effective tool in further reducing faecal contamination.

Lice (Pediculosis)

Since the cessation of compulsory dipping for sheep scab in 1989 there has also been an increase in the incidence of lice infestations. Both chewing lice (Bovicola ovis) and sucking lice (Lignonathus ovillus and Lignonathus pedallis) are capable of causing clinical disease in sheep during the autumn and winter months.

Infestations with chewing lice are the most common, causing disruption to normal feeding patterns and self-trauma due to the skin irritation caused by the feeding lice. The result is wool loss and damage, with heavy infestations being seen more frequently in animals in poor health or body condition score.

Since clinical signs and seasonality may resemble those seen with sheep scab, correct diagnosis is essential in order to implement effective treatment and control programmes.

Lice control

- Confirmation of diagnosis requires professional identification of lice in the fleece or from wool pluck samples.
- Plunge dipping in either OP or SP dip is a very effective treatment of lice infestations.
- Application of SP pour-on or spot-on products are also effective treatments.
- Sucking lice can also be controlled with systemic endectocide injection (ivermectin, doramectin or moxidectin), though this treatment is ineffective in the treatment of chewing lice infestations.
- Good biosecurity, including the presence of secure flock boundaries, is essential to avoid introduction of lice from bought-in or stray sheep.

Chorioptic mange

Chorioptic mange, caused by the sheep adapted mange mite, Chorioptes bovis, is primarily of importance as a potential cause of poor fertility in breeding rams. Clinical signs are caused by a hypersensitivity reaction to the presence of the mite, resulting in hair loss and severe thickening, crusting and irritation of the skin of the lower third of the scrotum. Secondary bacterial infection of the skin may also develop, further elevating scrotal temperature.

Similar signs may also be seen on the poll and/or lower limbs of affected rams and ewes.

Chorioptic mange control

- Confirmation of diagnosis depends on visualisation of mites taken from skin scrapings under a microscope.
- Treatment with injectable endectocides is generally ineffective since these mites feed only on skin surface debris.
- Treatment of choice is plunge dipping (topical application of OP dip to the scrotum of affected rams has been used successfully in other countries.)

Sheep scab

Sheep scab is a highly contagious skin condition caused by the mite Psoroptes ovis, which, since the withdrawal of compulsory dipping in 1989, has become fairly widespread. In the UK, clinical disease is most commonly encountered during the months of October till March and is a source of considerable economic loss in affected flocks.

Clinical signs result from the affected sheep's hypersensitivity reaction to the presence of these host-specific mites, which are capable of survival in the environment for up to 17 days in cold, damp conditions.

Sheep Scab

Sheep often display only itchiness initially, gradually leading to wool loss and fleece discoloration. The secretion of serum from the skin follows, giving the fleece a moist yellow appearance. Live mites are found at the periphery of such lesions, as progression to wool loss and skin thickening takes place at the centre.

Around eight weeks or so following infestation, large areas of bare, thickened, serum-encrusted skin are visible, by which stage the individual will have lost considerable body condition. Diagnosis is based on clinical signs and confirmation of the presence of live P. ovis mites by a veterinary surgeon. This is usually carried out by examination under a microscope of scrapings taken from the skin at the edge of suspicious lesions.

Sheep Scab can lead to wool loss and fleece discoloration

Sheep scab treatment and prevention

Given the highly contagious nature of this disease and that just one egg-laying female mite is required to initiate flock infestation, effective treatment and prevention strategies rely on co-ordinated whole flock treatment. Co-ordinating treatment with neighbouring farms is likely to reduce the risk of infestation/re-infestation.

Treatment is based upon injection with systemic endectocides (ivermectin, doromectin or moxidectin) or plunge dipping organophosphate (OP) or synthetic pyrethroid (SP) dip.

When plunge dipping, sheep should be submerged for at least one minute with their heads submerged twice during this period. Care must also be taken to maintain correct dip concentration. Dipping once in diazinon (an OP dip) is usually sufficient, while certain SP formulations require a second dip 14 days later.

Systemic endecticide injection may take several days to kill all scab mites, while effective plunge dipping provides a more immediate kill.

Biosecurity is essential in order to prevent infestation. Isolation and observation of all bought-in stock for three weeks prior to introduction into the main flock is advised.

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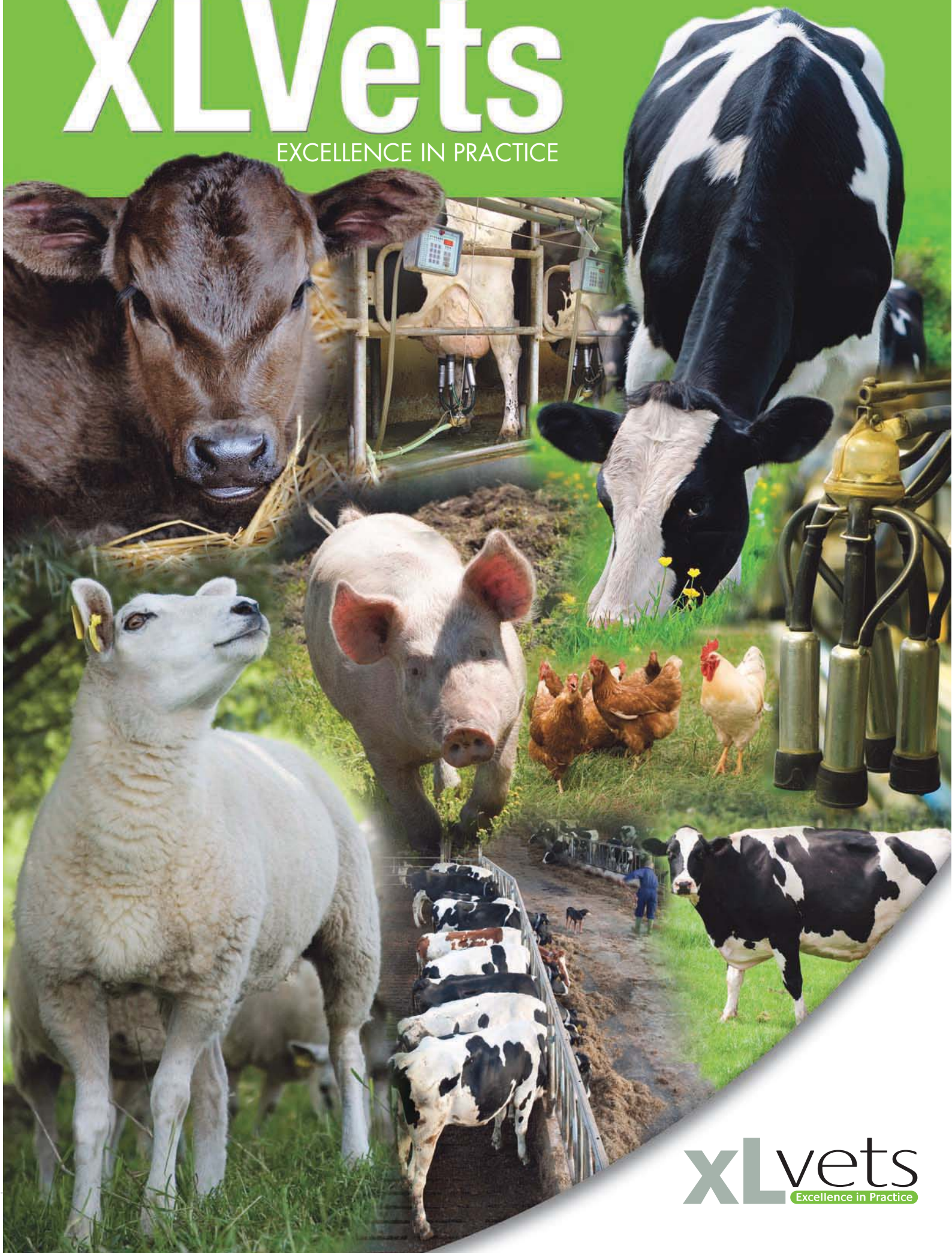

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XLVets - We E

The members of XLVets have worked hard to create what they see as a model of how practices can work together, sharing the latest ideas and passing on savings and joint expertise to clients.

The group comprises of a number of the foremost farm practices in the UK. With many years of combined experience, it is able to give expert advice on all areas of farm livestock, health and production.

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5	ARDENE HOUSE VETERINARY PRACTICE	**Ardene House Vet Practice Ltd** Aberdeen, Grampian Telephone: 01224 740700
6	AVC ARMOUR VETERINARY CENTRE	**Armour Veterinary Group Ltd** Mauchline, Ayrshire Telephone: 01290 550200
7	BELMONT VETERINARY CENTRE	**Belmont Veterinary Centre** Hereford, Herefordshire Telephone: 01432 370155
8	BISHOPTON VETERINARY GROUP	**Bishopton Veterinary Group** Ripon, North Yorkshire Telephone: 01765 602396
9	CAIN VETERINARY CENTRE	**Cain Veterinary Centre** Llansantffraid, Powys Telephone: 01691 828205
10	CALWETON VETERINARY GROUP	**Calweton Veterinary Group** Callington, Cornwall Telephone: 01579 383231
11	Capontree	**Capontree Veterinary Centre** Brampton, Cumbria Telephone: 016977 2318
12	Castle Veterinary Surgeons	**Castle Veterinary Practice Ltd** Barnard Castle, Durham Telephone: 01833 695695
13	Chapelfield VETERINARY PARTNERSHIP	**Chapelfield Veterinary Partnership** Norwich, Norfolk Telephone: 01508 530686
14	CLIFFE VETERINARY GROUP	**Cliffe Veterinary Group Ltd** Lewes, East Sussex Telephone: 01273 473232
15	clydevetgroup	**Clyde Vets Ltd** Lanark, Lanarkshire Telephone: 01555 660000
16		**Donald S McGregor and Partners** Thurso, Caithness Telephone: 01847 892387
17	DROVE VETERINARY HOSPITAL	**Drove Veterinary Hospital** Swindon, Wiltshire Telephone: 01793 522483
18	Dunmuir Veterinary Group CASTLE DOUGLAS	**Dunmuir Veterinary Group** Castle Douglas, Telephone: 01556 502400
19	EVG	**Endell Veterinary Group Ltd** Salisbury, Wiltshire Telephone: 01722 333291
20	FARM FIRST VETS	**Farm First Veterinary Services** Abergavenny, Gwent Telephone: 01873 840167
21	Farm Veterinary Solutions	**Farm Veterinary Solutions** Uppingham, Rutland Telephone: 01572 822399

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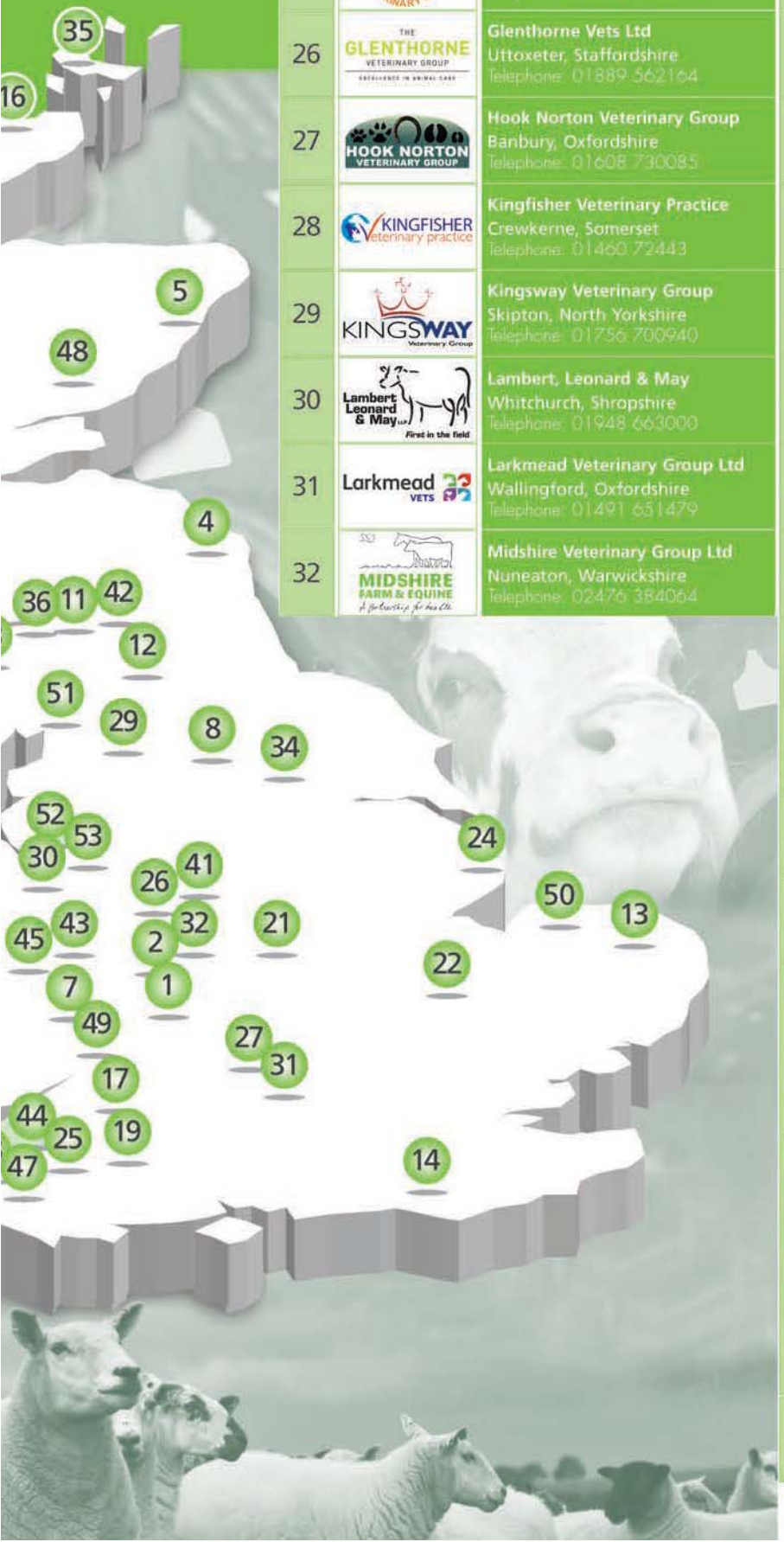


22	Fellowes Farm Equine Clinic	Fellowes Farm Equine Clinic Huntingdon, Cambridgeshire Telephone: 01487 773333
23	Fenton Vets Farm Animal	Fenton Vets Haverfordwest, Pembrokeshire Telephone: 01437 762806
24		Fenwold Veterinary Practice Spilsby, Lincolnshire Telephone: 01790 752227
25	Friars Moor Veterinary Clinic	Friars Moor Veterinary Clinic Ltd Sturminster Newton, Dorset Telephone: 01258 472314
26	The Glenthorne Veterinary Group	Glenthorne Vets Ltd Uttoxeter, Staffordshire Telephone: 01889 562164
27	Hook Norton Veterinary Group	Hook Norton Veterinary Group Banbury, Oxfordshire Telephone: 01608 730085
28	Kingfisher Veterinary Practice	Kingfisher Veterinary Practice Crewkerne, Somerset Telephone: 01460 72443
29	Kingsway Veterinary Group	Kingsway Veterinary Group Skipton, North Yorkshire Telephone: 01756 700940
30	Lambert Leonard & May	Lambert, Leonard & May Whitchurch, Shropshire Telephone: 01948 663000
31	Larkmead Vets	Larkmead Veterinary Group Ltd Wallingford, Oxfordshire Telephone: 01491 651479
32	Midshire Farm & Equine	Midshire Veterinary Group Ltd Nuneaton, Warwickshire Telephone: 02476 384064
33	Millcroft Veterinary Group	Millcroft Veterinary Group Cockermouth, Cumbria Telephone: 01900 826666
34	The Minster Veterinary Practice	Minster Veterinary Practice York, North Yorkshire Telephone: 01904 486712
35	Northvet Veterinary Group	Northvet Veterinary Group Kirkwall, Orkney Telephone: 01856 873403
36	Farm Paragon	Paragon Veterinary Group Carlisle, Cumbria Telephone: 01228 710208
37	Parklands Veterinary Group	Parklands Veterinary Ltd Cookstown, Northern Ireland Telephone: 028 867 65765
38	Penbode	Penbode Vets Ltd Holsworthy, Devon Telephone: 01409 253418
39		ProStock Vets Ltd Nantyci, Carmarthen Telephone: 01267 233266
40	Rosevean Veterinary Practice	Rosevean Veterinary Practice Penzance, Cornwall Telephone: 01736 362215
41	ScarsdaleVets	Scarsdale Veterinary Group Derby, Derbyshire Telephone: 01332 294929
42	Scott Mitchell & Associates Veterinary Surgeons	Scott Mitchell Associates Hexham, Northumberland Telephone: 01434 608999
43	Severn Edge Veterinary Group Farm	Severn Edge Veterinary Group Bridgnorth, Shropshire Telephone: 01746 763998
44	Shepton Vets Farm	Shepton Veterinary Group Shepton Mallet, Somerset Telephone: 01749 341761
45	Shropshire Farm Vets	Shropshire Farm Vets Ltd Shrewsbury, Shropshire Telephone: 01743 860920
46	St Boniface Veterinary Clinic	St Boniface Veterinary Clinic Crediton, Exeter Telephone: 01363 772860
47	Synergy Farm Health	Synergy Farm Health Ltd Evershot, Dorset Telephone: 01935 83682
48	Thrums Veterinary Group	Thrums Veterinary Group Kirriemuir, Angus Telephone: 01575 572643
49	Tyndale Farm Veterinary Practice	Tyndale Vets Ltd Dursley, Gloucester Telephone: 01453 511311
50	Wensum Valley Veterinary Surgeons	Wensum Valley Veterinary Surgeons Fakenham, Norfolk Telephone: 01328 864444
51	Westmorland Veterinary Group	Westmorland Veterinary Group Kendal, Cumbria Telephone: 01539 722692
52	Willows Farm Animal Veterinary Practice	Willows Veterinary Group Northwich, Cheshire Telephone: 01606 723200
53	Wright & Morten	Wright & Morten Macclesfield, Cheshire Telephone: 0845 8330034

The future of agriculture needs a healthy industry, which needs healthy animals.

XLVets is a group of 53 independently owned, progressive veterinary practices that are committed to the future of the UK livestock industry. Spanning the length and breadth of the UK, we work together, sharing experience, knowledge and skills in order to define and deliver the highest standards of veterinary practice, animal health and productivity.

We strive to be at the heart of our farm clients' business as the primary source of highly valued on-farm advice and the central co-ordinating consultant for other farm services.

Founded in 2005, XLVets originated from a group of dynamic farm animal veterinary practices, who worked hard to create what they saw as a model of how individual practices can work successfully in partnership. Following a period of rapid growth, XLVets is now becoming recognised nationally as a 'quality mark' for veterinary care; not only for livestock, but also in the fields of small animal and equine care.

The group also endeavours to source and supply the highest quality, best priced medicines, equipment, products and accessories.

In addition, XLVets works alongside academic bodies and commercial research and manufacturing companies; forging strong industry partnerships to place its member practices at the forefront of veterinary science.

For farm clients of XLVets member practices this gives local access to many of the unique national initiatives the group develops; from health management, consultancy advice and disease prevention, through to bespoke analytical services to improve farm productivity and financial returns.

XLVets member practices are dedicated to providing a high quality, cost effective service to their clients, to support long-term growth and future prosperity within the UK livestock industry.

For further information on XLVets and its member practices please contact the XLVets office.

Telephone: **(01228) 711788**
Email: **admin@xlvets.co.uk**

www.xlvets.co.uk

xLvets
Excellence in Practice

Ticks

In the UK, the sheep tick Ixodes ricinus is by far the most important vector of tick-borne disease. Survival of ticks in the environment is dependent upon the availability of large mammals, including sheep, cattle, hare, and deer, on which adult ticks can feed and the presence of a moist microclimate when not feeding. Thus ticks and their associated diseases remain largely confined to certain areas of upland grazing, while they remain absent from well-drained, more intensively farmed lowland areas.

The tick I.ricinus has a three year life-cycle. During this time only around 17 days are spent feeding, with the remaining time being spent on the ground.

Ticks are generally inactive during winter, but become active in spring in response to rising environmental temperature. During the following 4-8 weeks the tick must feed before final exhaustion and drying-up.

In some regions of the UK, particularly in the west of the country (e.g. parts of the Lake District and Wales), a second period of tick activity occurs in the autumn. This may extend into the winter months if conditions are very mild.

Tick-borne fever (TBF)

Tick-borne fever is a severe bacterial infection of sheep caused by the rickettsia Anaplasma phatocytophilum.

The incubation period, following natural exposure of sheep to infected ticks, is 4-8 days. The primary clinical sign is high fever which may last for seven days. During this time appetite is depressed and coughing may be observed.

Infection causes profound immune system depression and thus a greatly increased susceptibility to secondary infections. These may include pasterellosis, listeriosis and other bacterial, viral and fungal infections. Definitive diagnosis of TBF requires the examination of blood smears under a microscope.

However, infection of pregnant ewes will often lead to abortion and high mortality rates. In lambs, tick pyaemia is the most common complication associated with A. phagocytophilum infection. This is caused by the spread to the joints and sometimes spinal cord of the normally commensal skin bacteria, Staphylococcus, following introduction via tick-bites.

Infection of naive breeding rams during tupping and the preceding six to eight weeks will have a profound negative impact on fertility.

Louping-ill

Louping-ill is an acute viral disease affecting the brain and spinal cord of infected sheep, though infection of other vertebrate species can also occur.

All ages of sheep are equally susceptible to infection. However, in regions where the disease is endemic, older sheep often have effective immunity and thus disease is often seen in lambs or, more commonly still, in yearlings returning from winter tack and reintroduced to tick infected pastures.

Clinical signs may vary from mild transient inco-ordination to sudden death. Progression from inco-ordination to paralysis, convulsions and death within 24-48hrs is however, the usual outcome. Co-infection with Anaplasma phatocytophilum (see above) often gives rise to mortality rates approaching 100 per cent.

Louping-ill should be considered when sheep are exhibiting signs of neurological disease or sudden death. Disease occurs in areas where ticks are active or transportation from such areas has recently taken place.

Definitive diagnosis of louping-ill requires sampling of the brainstem at postmortem or blood sampling to assess antibody response.

Control of tick-borne disease

Transmission of tick-borne disease predominantly occurs during periods of peak tick activity. Control is most effective when attention is given to controlling the level of exposure to infected ticks as well as maximising sheep immunity.

Measures which can be taken to reduce losses due to tick-borne disease include:

- Avoiding the grazing of tick-infested pastures during periods of peak tick activity.
- Regular plunge-dipping or application of synthetic pyrethroid pour-on products to minimise sheep contact with ticks.
- Avoidance of introduction of naive pregnant ewes to tick-infested pasture.
- Controlled introduction of non-pregnant ewes to tick-infested pasture during low risk periods to allow immunity to develop.
- Oxytetracylines are effective in the treatment of clinical cases of TBF and in some situations may be used prophylactically.
- Vaccination of breeding stock against louping-ill should be considered.

Ticks spend most of their life on the ground - only feeding for 17 days of their three year life

Reference

[1]For further information on the Sustainable Control Of Parasites in Sheep please visit **www.scops.org.uk**

BIOSECURITY FEATURE

FarmSkills
GROWING FARM BUSINESS SUCCESS

Make your farm your FORTRESS

Make Your Farm Your Fortress

With infectious diseases at the forefront of production and economic problems for the livestock industry, XLVets and FarmSkills are spearheading a campaign to put biosecurity at the top of farmers' 'to do lists' for the year ahead by encouraging you, as producers, to **Make Your Farm Your Fortress**.

From reduced productivity and lower milk yields, to a reduction in fertility, increased abortion and cull rates, the impact of poor biosecurity on farm can have a devastating effect on your business. By identifying the diseases that are more likely to be a threat to your stock and working with your vet to develop a biosecurity action plan for your farm, both the immediate and long term effects can be dramatic.

Biosecurity is often associated with disinfectant-soaked straw and endless welly and tyre washing. In reality it is a simple management system to reduce the risk of infectious diseases being introduced into, and spreading through a herd or flock, thereby saving time and money.

The most obvious risk to producers is the introduction of a diseased or carrier animal bringing infectious disease onto your farm, but what about the less obvious risks such as wildlife, watercourses and contractors - what can be done to prevent the risk of biosecurity breakdown from these?

Have you considered the following top 10 risk factors to your farm and stock?

Have you considered the risk?	What can you do?
1. Purchased stock	Home bred replacements
	Infectious disease testing prior to purchase
	Purchase from CHeCS accredited herd, or a known single source
	Bulls count too - avoid sharing bulls where possible, but if unavoidable make sure they are from a known source of equivalent health status to your own
2. Poor boundaries	Assess the risk of your neighbouring enterprises
	Have stock-proof boundaries which are checked and maintained regularly to minimise nose-to-nose contact with neighbouring stock
	Consider the risk of any natural boundaries including shared watercourses your own
3. Shows and sales	Have a separate show team plan
	Vaccination
	Isolation after each event
	Use your own vehicles to transport animals where possible and avoid using hauliers with multiple consignment loads
4. On-farm visitors (salesmen, vets, contractors)	Provide cleansing and disinfectant materials for all visitors/workers on arrival and departure
	Provide farm's own protective clothing
	Discuss your biosecurity policy with them

Have you considered the risk?	What can you do?
5. Vaccination failure	Ensure it is kept cool whilst transported
	Make sure fridges are working properly and that medicine is not out of date
	Ensure good hygiene and appropriate equipment
	Consult and agree a testing and dosing programme with your vet who will be able to advise of different risks, timescales and procedures
6. Shared watercourses	Consider alternatives and risk of wildlife and neighbours
	Use mains water wherever possible
7. Wildlife and other animals	Control and minimise exposure to feed by keeping stores covered and shut
	
	Discourage vermin by keeping farmyard and surroundings clean and tidy
	Dispose of old or soiled feed safely
	Prevent dogs from accessing feed areas and be mindful of public footpaths where dogs may have been in contact with stock
8. Cats and dogs	Minimise risk of stock contact
	Dogs should be regularly treated for tapeworms, particularly newly acquired animals, before they have access to pasture
	Avoid walkers' dogs having free access to livestock areas. As well as the risk of worrying sheep they can carry disease on to the farm
	Cats and vermin must not get into food stores (cat faeces may contain Toxoplasma which can cause abortion storms in sheep)
9. Slurry	Apply a risk assessment to any slurry or farmyard manure taken
10. Shared kit and contractors	Wash vehicles on arrival and on leaving the farm - dirty vehicles of all types pose a high risk of introducing infection
	
	Borrow or buy from a known source

Have you got a farm-specific biosecurity policy?

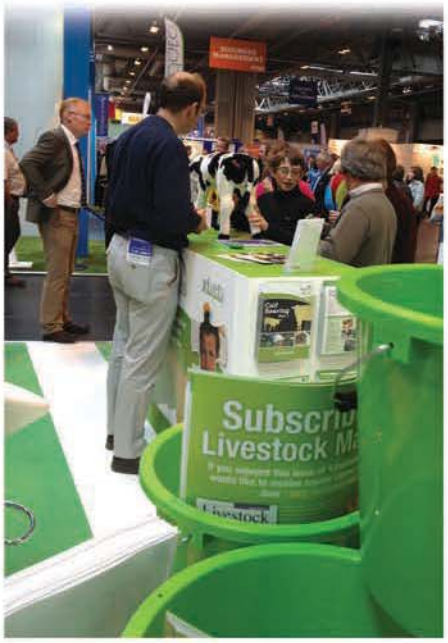
Biosecurity measures on farm don't have to be complex. Having a simple, practical and achievable strategy which is easily implemented and understood by everyone working on farm can have instant positive effects.

Talk to your vet about establishing your own herd biosecurity protocols - many biosecurity recommendations are common sense, such as thorough and effective cleaning and disinfection, but other basic biosecurity measures such as adequate boundaries and timely vaccination of stock will also improve and protect your business.

With recent XLVets campaigns and projects on BVD, Johne's, TB and access to further Defra funding for training and development throughout 2014/15, FarmSkills will be focusing on biosecurity through a variety of workshops, online campaigns and challenges at this year's agricultural shows and events to get farmers thinking about their risk factors and what they should be doing on their own farm to reduce them.

FarmSkills offers a variety of practical, on-farm workshops led by vets and industry experts to improve business and livestock production across the UK. Our workshops offer a hands-on approach to training, giving you the skills and knowledge to implement changes and improvements back on farm immediately. Why not attend one of our 'Safe Use of Veterinary Medicines' workshops to make sure you're getting the most from your vaccines, or get the most up to date knowledge on housing, nutrition and immunisation for your young stock on one of our calf rearing workshops?

All our workshops are listed on our website www.farmskills.co.uk where you can search for events in your area, get detailed information on what you'll learn on the day, as well as booking and paying online to confirm your space. Everyone who attends our workshops will also receive a fact-book as a reference guide from their training and containing further information on their chosen subject to use back on farm.

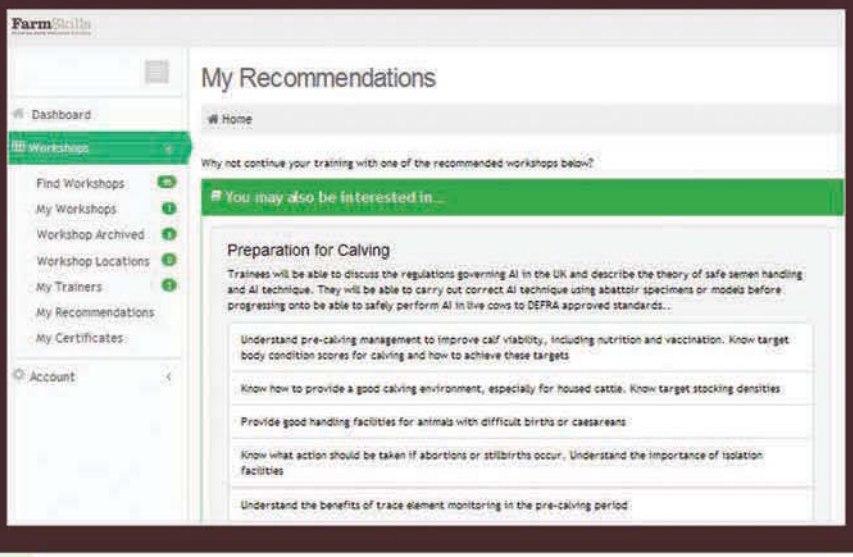


FarmSkills Farmer Portal launch

This year's Livestock 2014 event at Birmingham's NEC will see the launch of the FarmSkills Farmer Portal, an innovative and interactive online tool allowing farmers to log their FarmSkills training and development, download their certificates and view recommended workshops taking place in their area.

As well as acting as a useful online training tool, the Portal will also link in with wider national XLVets campaigns, including the 'Make Your Farm Your Fortress' and BVD initiatives, giving farmers further information on what the issues are and how they can get involved on a local and national level.

Accessing the Portal is easy, simply contact the FarmSkills team to set up your username and password and all your previous training history and certificates as well as future recommendations will be waiting for you at the touch of a button. Contact the team today on farmskills@xlvets.co.uk or visit the XLVets Stand at Livestock 2014 (Stand AH-97) or NSA Sheep Event for more information.



Win

A one-day FarmSkills workshop of your choice

Over the last 12 months FarmSkills have given away over 1,000 of our now infamous green buckets at shows and events across the country and we want to know how you're putting them to use on farm.

To enter simply send the FarmSkills team a picture of you using your bucket - the more interesting and quirky the better - along with your name and contact details to **farmskills@xlvets.co.uk**

Entries will be featured on the Love My FSK Bucket page on www.farmskills.co.uk and the lucky winner will be picked by the FarmSkills team on Friday 15th August.

Get snapping to be in with the chance of winning!

FarmSkills

GROWING FARM BUSINESS SUCCESS

xLvets Excellence in Practice

FarmSkills workshops are open to farmers from across the country and on any livestock subject - **positive benefits from practical courses.**

2nd-3rd July
Visit us at 'Livestock 2014'
Birmingham NEC

XLVet Training Services Ltd, Mill Farm, Studley Road, Ripon HG4 2QR

www.farmskills.co.uk

Telephone **01765 608489**

E-mail **farmskills@xlvets.co.uk**

FarmSkills workshops coming up

Sheep

St Boniface Veterinary Clinic	28 August	Devon
	Sheep Parasite Control and Wormer Resistance	
Bishopton Veterinary Group	2 September	North Yorkshire
	Pre Tupping Management	
Hook Norton Veterinary Group	24 September	Oxfordshire
	Lameness in Sheep	

Dairy

Embryonics	14-16 July	Cheshire
	DIY AI	
Hook Norton Veterinary Group	13 August	Oxfordshire
	Reducing your Mastitis and Cell Counts	
St Boniface Veterinary Clinic	19 August	Devon
	Calf Rearing - Post Weaning to Service	
Bishopton Veterinary Group	20 August	North Yorkshire
	Foot Trimming	
Chapelfield Veterinary Partnership	5 September	Norfolk
	Respiratory Disease in Cattle	
Bishopton Veterinary Group	15-17 September	North Yorkshire
	DIY AI	
Shropshire Farm Vets	16 September	Shropshire
	Mastitis and Controlling Cell Counts	
Shropshire Farm Vets	17 September	Shropshire
	Bovine Lameness and Practical Foot Trimming	
Embryonics	17-19 September	Cheshire
	Mobility/Foot Trimming	
St Boniface Veterinary Clinic	18 September	Devon
	Milkers School	
Shropshire Farm Vets	19 September	Shropshire
	Calf Rearing - Birth to Weaning	

Safe and Effective Use of Veterinary Medicines

Hook Norton Veterinary Group	16 July	Oxfordshire
Embryonics	25 July	Cheshire
Chapelfield Veterinary Partnership	8 August	Norfolk
Bishopton Veterinary Group	17 September	North Yorkshire
Shropshire Farm Vets	18 September	Shropshire

Please note dates are subject to change

Department for Environment Food & Rural Affairs

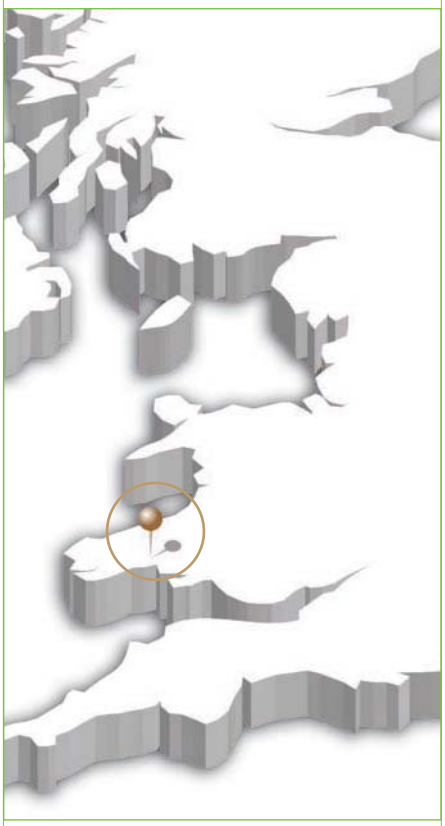
The European Agricultural Fund for Rural Development: Europe investing in rural areas

Duchy College
Cornwall's College of the Countryside

AHDB Agriculture & Horticulture Development Board

ADAS

ALLEN & PARTNERS
Veterinary Surgeons



Veterinary surgeon	Paul Rodgers
XLVets practice	Allen & Partners

PAUL RODGERS, ALLEN & PARTNERS

It can be very stressful to be farming in an area where bovine tuberculosis (bTB) is endemic in the wildlife population and TB tests frequently identify TB-infected cattle...

Protecting your herd from bovine TB (bTB) with biosecurity measures

Based in Whitland, Carmarthenshire, XLVets' Paul Rodgers of Allen and Partners has been heavily involved in working with the Welsh Government and making biosecurity visits to farms in bovine TB areas. Here he offers some advice to cattle farmers on taking precautions against the disease.

Certainly it can be very stressful to be farming in an area where bTB is endemic in the wildlife population and TB tests frequently identify TB-infected cattle. However, at farm level, there are still a number of practical precautions that can be taken to minimise the risk of your cattle becoming infected.

Disease levels in a herd are influenced by the introduction of new disease into the herd, and by its spread within the herd. In the case of bTB, consideration needs also to be given to preventing the spread of this disease from an infected herd into the local wildlife populations.

Assessing the risks on your farm

The bTB status of your area and individual farm dictates the main risk factors for you:

1. **Infected farms in endemic areas** - Maintaining a closed herd status is likely to be unfeasible due to the need to replace bTB reactors. However, there are still actions which can be taken to reduce the risk of a future infection, e.g. by preventing badgers from accessing feed stores.

2. **Uninfected farms in or near endemic areas** - If badgers are present on, or around your farm, then this is the main risk factor and as such should be the main priority for control. If possible, keep the herd closed.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3. **Uninfected farms in areas with low bTB incidence** - In these areas there will either be no, few or uninfected badgers in the area. Cattle movement is the prime source of potential infection. If the herd is not closed, then adopt a robust policy for replacements. Cattle should not be moved in from endemic areas, or from other farms that have introduced animals from high risk areas. Minimising contact with wildlife is still important to reduce the chances of introducing TB into an uninfected badger population.

On-farm **biosecurity** measures

In TB areas, or where badgers are present, then there is the possibility of TB-infected badgers coming into contact with cows at grass. However, many other risks can be minimised or prevented by taking appropriate action.

Cattle can become infected with bTB from other cattle in a number of ways; by co-grazing, (for example on common land), shared housing; at shows; returns from market; and grazing/housing away from home premises with direct (nose to nose) or indirect (e.g. shared water) contact with other herds.

To reduce the opportunity for disease spread from nose to nose contact whilst cattle are at grass, inspect your field boundaries; a separation from your neighbouring cattle fields of at least three metres is recommended. Also check your fencing; is it robust enough to prevent cattle escaping into the next field and mingling with another herd?

Where fields are next to, or include woodland or scrub inhabited by badgers or deer that could harbour TB, consider whether these areas could be put down to other crops or grazed by non-bovines.

If there are populations of badgers present on and around the farm, securing feed stores should be the main priority, closely followed by cattle housing and feed areas. Although difficult it is always possible to secure buildings. Badgers can access through any gap greater than 10cm (the height of most mobile phones), so checking entry points (figs 1-3) is recommended.

Figure 1

Figure 2

Figure 3

Although passive fencing is best, to prevent badgers accessing maize silage clamps and feed stores, it may be necessary to use electric fencing (three strands at 10cm, 15cm and 20cm from the ground).

Reducing contact at pasture is much more difficult. Recent evidence shows that nose to nose contact between badgers and cattle is rare, so the main risk at pasture is probably badger urine and faeces which are concentrated around setts and latrines. Fencing off these areas is well worth the effort, but remember to do it in such a way that the area can be cut back to prevent it reverting to scrub, which would cause the latrines to be moved further into your fields.

Any livestock transport vehicles, cattle crushes or slurry and manure equipment that are shared between farms or hired in, should be thoroughly cleaned and disinfected before introducing your stock to them.

Manure, slurry, and dirty water from another farm are also potential sources of bTB (and other) infection and should not be spread on livestock pasture.

The use of foot dips by visitors and staff is another overlooked safety precaution that can be taken against disease spread.

The above security precautions are relevant not only for **bTB**, but also for infectious diseases such as **BVD** and **leptospirosis**.

Buying-in cattle

Whether you are on a farm which is in the clear for TB and wanting to expand your herd number, or looking to replace stock lost in a recent TB shutdown, it is still important to follow biosecurity procedures when bringing new cattle to the farm.

A pre-movement TB test carried out on animals before they move to the farm may identify any that have TB lesions at that time. A recent clear whole herd test is better evidence that the bought-in animal is uninfected, however, TB is a slow chronic disease, and it takes time for infected animals to become detectable. This means it is still possible that they could be TB-infected, but not react to the skin test. So don't rely just on one pre-movement test. Instead, when the animals arrive on your farm, quarantine them for at least two months, and then test again.

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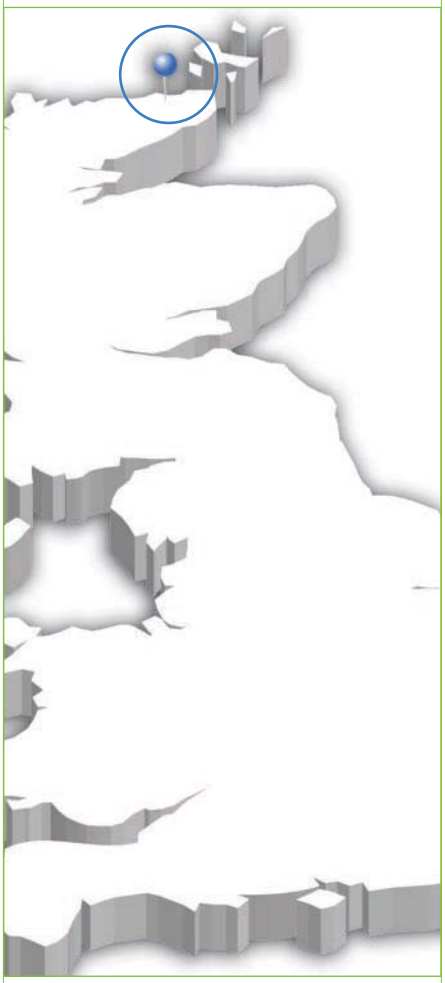
KENNETH WILSON, DONALD S McGREGOR AND PARTNERS

Getting the best out of sheep vaccinations

Vaccination is a routine activity in the vast majority of sheep flocks. It is seen as a cornerstone of preventative medicine and flock health control and has allowed farmers to significantly improve the health of their flocks, reducing losses from a wide range of infectious diseases.



Veterinary surgeon	Kenneth Wilson
XLVets practice	Donald S McGregor and Partners

The aim of this article is to provide an overview of the science of vaccination, and explore how effective practical implementation of vaccination protocols on farm can be achieved.

What is a vaccine?

Whenever an animal is infected by a foreign organism (antigen) it is either overwhelmed by the infection, killing the animal or an immune response is mounted to eliminate and kill the organism. This immune response involves molecules called antibodies. The role of antibody is to recognise foreign agents, and attract the attention of the immune system to these invaders. Once alerted, the immune system can then home in on the invading organisms and kill them. This is known as the antibody/antigen response.

Vaccines aim to induce this protective response without causing disease to develop. Vaccines either contain killed forms of an infectious agent or live, attenuated (weakened) agents. Agents used in attenuated vaccines have been altered in the laboratory so that they stimulate the immune response without developing into full blown disease. It should be noted that some live vaccines will cause mild clinical signs of disease in some animals. Some vaccines also contain an adjuvant. This is a chemical which is designed to irritate the immune system so as to alert it to the presence of the vaccine antigen and prompt a much stronger immune response.

Variation in response to vaccination within populations

Studies have shown that even in flocks with identical husbandry and ages, the response to vaccines varies significantly within groups of animals. This is due to individual animals mounting differing responses to invading pathogenic organisms.

By vaccinating whole populations of animals, those sheep which do not develop such a strong immunity are protected to some degree by the strength of the overall flock immunity following vaccination. This in itself will significantly reduce the chance of an outbreak of disease.

It must be noted, however, that in some cases even when strong immunity exists (natural or vaccine induced), an overwhelming infection can still break through.

Maternally Derived Antibody (MDA)

Certain vaccinations are administered to pregnant ewes in order to pass on protective immunity to their lambs, helping to guard against a range of neonatal lamb diseases, chiefly the clostridial infections. For these vaccines to be successful the lambs must receive adequate colostrum as soon as possible after birth. The quantity and quality of a ewe's colostrum is dependent on adequate nutrition, particularly during the third trimester of pregnancy.

Antibodies are passed to the lamb in huge quantities in the colostrum and absorbed through the gut into the circulation. This is how newborn lambs are able to protect themselves against disease.

Lambs will have greatest absorption during the first six hours of life. The ability to absorb antibodies then declines rapidly, with essentially no transfer after the first 24 hours of life.

With multiple births the proportion of colostrum and hence antibody available to each lamb is reduced.

Diseases for which there is a currently licensed vaccine for use in sheep in the UK

Disease agents covered
• Blue Tongue Virus
• Clostridial disease (not all vaccines cover the same species of clostridia)
• Clostridial disease and Pasteurella
• Chlamydial (Enzootic) Abortion
• Louping Ill
• Orf
• Paratuberculosis (Johne's Disease)
• Pasteurella
• Schmallenberg Virus
• Toxoplasmosis

When vaccinating use appropriate handling facilities to restrain sheep to facilitate injection

How do you ensure effective vaccination?

Administer the correct vaccination course

Vaccination protocols will often require that the product is administered at a specific time of the production cycle. Where a primary course requires two doses to be administered at a particular time interval, it is important to follow the protocol carefully. Omitting to give the second dose prevents a satisfactory immune response being stimulated and can lead to total failure of the vaccination regime.

Avoid multiple vaccines

Never mix vaccinations in the same syringe and always inject different products at different sites on opposite sides of the neck if possible. Only use two vaccines at the same time if they are specifically licensed to be given together.

Store vaccines correctly

Vaccines must be stored at fridge temperatures at all times. Coolboxes are a simple and effective way of keeping vaccines at the right temperature in transit or while waiting to be administered.

Only vaccinate healthy animals

Vaccination of sick sheep will lead to failure of the vaccination and can in some cases cause significant adverse reactions.

Use appropriate handling facilities

Handling systems need not be complicated. The aim should be to restrain sheep firmly to facilitate injection.

Inject into the correct site

Vaccines are generally administered in the neck. Check the data sheet to find out if the vaccine you are using should be administered subcutaneously (under the skin) or intramuscularly.

Use suitable vaccination equipment

Needle hygiene is critical to preventing injection site abscesses. Always use sharp, sterile needles, and where an automatic vaccinator is used, the needle should be changed every 20 doses. If vaccinating small numbers of sheep with a single dose needle, do not re-insert the needle into the vial of vaccine. Leave one needle in the vial of vaccine for drawing up and use others for injecting the sheep.

Multi-dose, automatic vaccinators can be used very effectively to administer vaccines efficiently and cleanly. It is important to clean such equipment and dry it thoroughly after use. Any fluid, detergent or residual vaccine material could interfere with subsequent vaccines.

We strongly recommend farmers using multiple dose guns to consider the Sterimatic system which cleans the needle between each injection to minimise the risk of injection abscesses.

Figure 1: Sterimatic multi-dose syringe

Figures 2 and 3 show the Stericap. This contains a foam insert soaked in a liquid disinfectant. The needle passes back and forth through the disinfectant each time it is pressed through the animals' skin. This has been proven to be very effective at preventing the transmission of both bacterial and viral contaminants from sheep to sheep during vaccination.

Figure 2: Stericap

Figure 3: Needle is cleaned by Stericap

Conclusion

Vaccines play a vital part in optimising flock health. In order to maximise their potential, it is important for both vets and farmers to 'read the small print' and pay attention to specific storage and administration instructions. A yearly flock health plan or equivalent can be an excellent point of contact between vets and farmers to discuss the different vaccination protocols suitable for each individual flock.

STUDENT DIARY

Alice McLeish, Edinburgh

Third year veterinary student, Edinburgh University

Small animals, Pseudomonas and a sad lack of sheep

Since the last issue, I've passed my last set of third-year exams and so am safely into fourth year, starting in September. I'm looking forward to this as, after a year of pharmacology, statistics and the cat and dog course, next semester will include the farm animal course. This will include lots of practicals at the vet school's on-site dairy herd, sheep farm, and large animal hospital which I'll be able to tell you about in my next columns.

Edinburgh Vet School in the snow- hopefully not like this for practicals next year

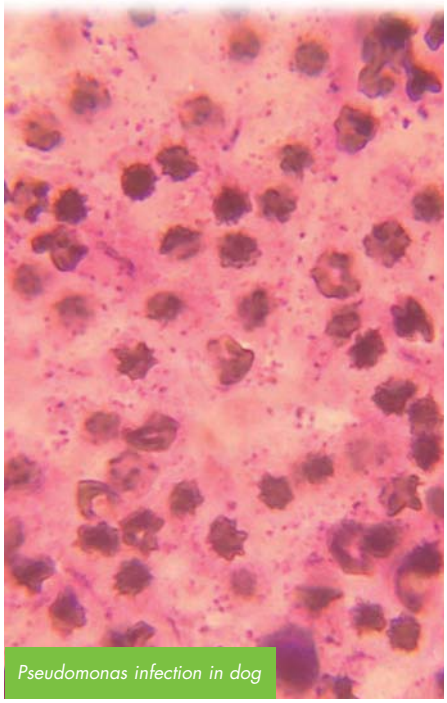
At the moment though, I'm seeing practice at a small animal surgery in Edinburgh. This is the first time I've actually gone to an entirely small animal practice, which is interesting, and I'm definitely missing my wellies! However, it is exciting to see more intricate surgeries, such as orthopaedics, and to see the difference between economic considerations in treating farm animals and the sentimental value of pets. It's interesting, and good for my clinical knowledge, seeing the vets working through every possibility with all the diagnostics to get an exact conclusion even at the cost of thousands of pounds, but I'm certainly more comfortable with justifying treatments for the sake of herd, or public health, or economic reasons.

One thing I have particularly enjoyed at this practice though is the in-house laboratory, for blood testing and basic diagnostics. A case that has been carrying on through the weeks I've been here, and which I was called away from writing this article to help with, has been a dog which presented with severe respiratory problems, and eventually anaemia too. We took samples from an area in the chest that seemed abnormal under X-ray and ultrasound, and after processing it, found it to be a Pseudomonas infection, with clearly visible masses of bacteria on the slides we produced. This was particularly exciting as I'd never been any use at viewing slides like this, but it all made so much more sense and was far more interesting when it was related to an actual case that I knew and cared about.

Hopefully next time I'll have more relevant livestock matters (pun fully intended) to talk about but I realised that I had so little small animal surgery experience comparatively that I'd better do a few months of it for now. I'm missing being around the farms though, so it definitely hasn't changed my mind on wanting to become a livestock vet.

About me

Twenty-one years ago, I met my first sheep while on holiday on the Isle of Skye. My delighted parents realised they'd finally found something to keep me occupied, as I spent the whole week pressed against the window of our house, baa-ing at all the sheep that went past. Jokingly, they said I must be going to be a vet (I couldn't say 'Mummy' or 'Daddy', my vocabulary consisting entirely of animals and animal noises). Several years on, here I am in my third year studying to be a vet in Edinburgh, the city I grew up in, with the hope of becoming a mixed practice vet once I graduate.



Pseudomonas infection in dog

STUDENT DIARY

Antonia Matthews, South East London

Second year veterinary student, Royal Veterinary College

The joys of dogs, cats, horses, goats, dissertations and exams

Since my last column I have finished my iBSc in Global Health, and faced the joys of exams and dissertation deadlines.

In true form for a vet student my dissertation focused on fluffy animals with the very uncatchy title 'A review of policy surrounding the use of companion animals for palliative care in the United States and any reasons for inequities'. Although a policy review might not excite everyone, the numerous health benefits of interaction with companion animals from lower blood pressures and better nights' sleeps (I would debate this when the cats are charging up and down the stairs at 3am) to greater emotional well-being (again I would argue with this due to the emotional turmoil I feel every time I look at the chewed items of furniture throughout my house thanks to Algernon, the Irish Wolfhound) is a fairly good excuse for welcoming more animals into one's life (in particular two of the kittens of a feral yard cat that may be arriving at mine on Saturday).

The dogs when they aren't particularly reducing stress levels

Exams were faced as usual; refusing to acknowledge their existence until the latest possible moment, with the highlight being the confusion of turning up to an exam and being greeted by the start of Comicon (if you are unaware of this unusual event I suggest Googling it just for the costumes). My excitement of the 'vetty' essay question on food security linked with the environment appearing in one of the exams was so great even sled dogs and donkeys received a mention.

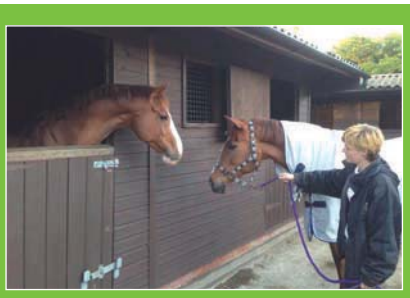
Other excitement has included my cob, Rosie, foaling over Easter. She was accidentally bought in-foal leading to more stress than desired. In true fashion the one night she wasn't checked over more than a month's period she had her not so little filly, Diamond. Trying to get my thoroughbred, Princess, in-foal has also not quite gone to plan with us having to resort to using Regumate and Prostaglandins as well buying our own stallion, reminding me that animals don't read textbooks.

Diamond, the new arrival

The other horses are being kept busy competing at county shows or just getting to enjoy the grass as it comes through. Milking the goats has also begun again with the usual confusion of a lack of kids to cause the lactations but at least the cats get to enjoy it!

About me

I am a veterinary student in between my second and third years at the Royal Veterinary College, I am currently finishing a year out to do a degree in Global Health at King's College London. I grew up mostly in South East London spending every moment I could further south east in Kent, working on farms and stable yards. Having escaped living in London I now enjoy the fresh air of Hertfordshire with the husband, dogs, cats, small furries, reptiles, horses and my own small herd of dairy goats.



Hopefully a successful match...

My Labrador, Earnest, is also about to enjoy life more as he starts his life as a stud dog. A recent lecture at RVC given by Aimee Llewellyn, Geneticist at the Kennel Club helped to confirm the importance of the eye tests and hip and elbow scoring Earnest has received as well as the importance of avoiding inbreeding and of ensuring breeding for a show ring conformation doesn't negatively affect health, an important lesson for all species.

Peach (sponsored by Nature's Menu) providing a well needed break from exams competing at Herts County

Are you?...

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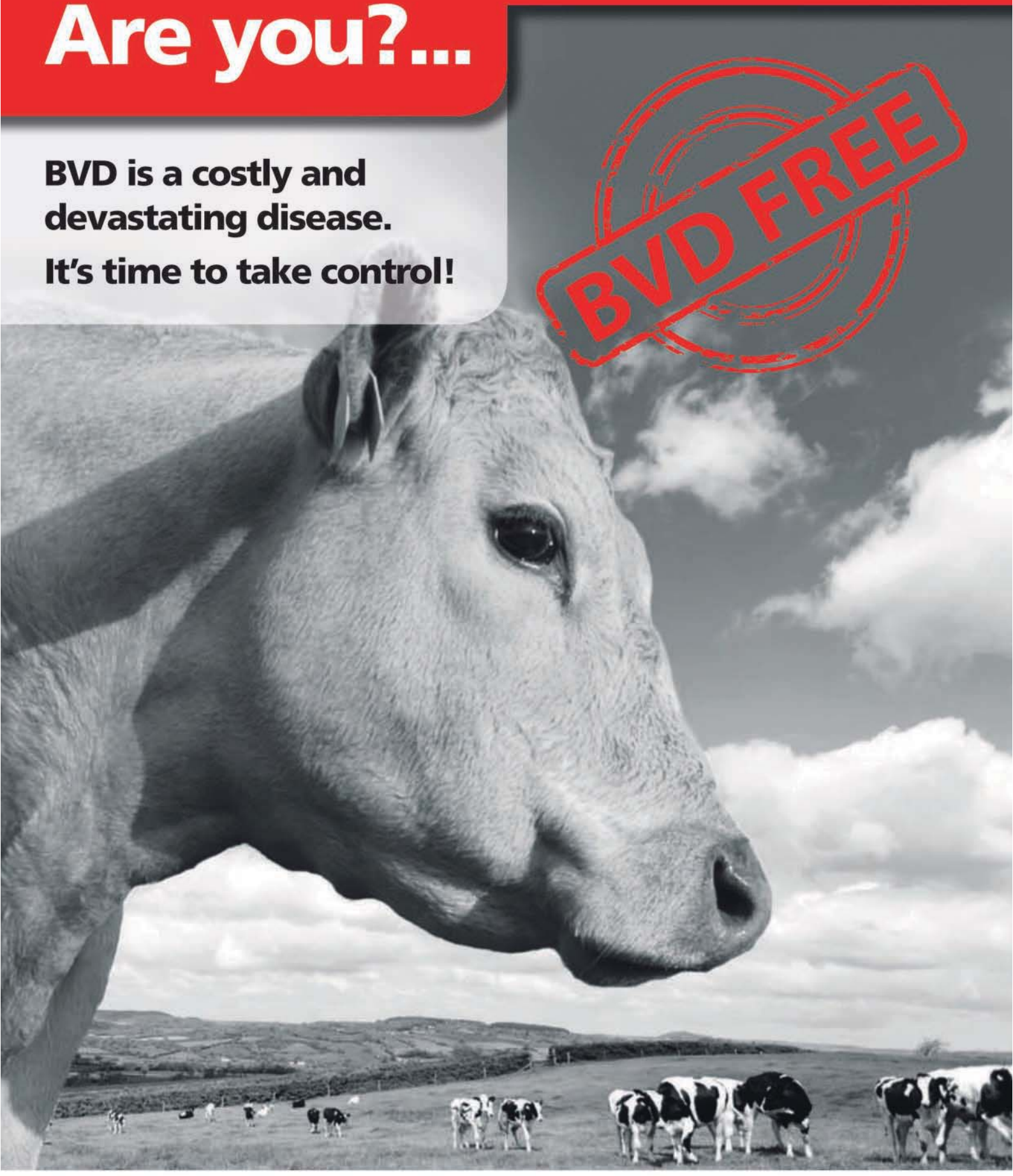

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